

Prepared by:

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# "Preserving Our Future Generations" <br> Improve Roadway Safety and M ove Toward Zero Deaths and Zero Serious Injuries 

## INTRODUCTION

For thousands of years, the S'Klallam Tribes (meaning "strong people") lived and prospered in a community based on strength, pride and survival on the lands now known as the Olympic Peninsula in Northwest Washington State. Their culture was rich in art, song, spirituality, traditional knowledge and social structure.

By 1855, S'Klallam Tribal leaders signed the Point No Point Treaty. By 1874, friction with settlers made it clear that the Jamestown S'Klallam community would not be able to remain in their traditional lands near Dungeness in Washington Territory. Under the leadership of Lord James Balch, a group of approximately 100 members pooled their money to purchase 210 acres of land rather than move to the reservation in Skokomish territory. They supported themselves by farming, fishing and working in local pulp mills, and received some aid from the federal government. In 1939, the Port Gamble band, located along the eastern end of S'Klallam territory accepted a reservation and became an officially recognized Tribe. The Jamestown people, not wanting to lose the land they had purchased or the independence they had worked so hard to obtain, continued to refuse to move to a reservation. In 1968, the Lower Elwha band located west of Port Angeles accepted reservation lands and was recognized by the federal government. Though "officially unrecognized", the Jamestown Tribe continued to receive services from the federal government until 1953, when those services were discontinued. Tribal leaders realized that without federal recognition, their rights to fish, hunt and gather in their usual and accustomed places were becoming increasingly limited by policy and by a growing local population. This affected their overall economic conditions and their ability to provide for the basic needs of their citizens, such as healthcare and education. In the mid 1970's, the Tribe began its effort to regain federal recognition and, after a lengthy legal struggle, was finally re-recognized on February 10, 1981. In 1988, the Jamestown S'Klallam Tribe became one of the first 20 tribes to participate in the Self-Governance Demonstration Project, showing that Tribes could manage their own finances, programs and services.

Today, the Jamestown S'Klallam Tribal campus is located in the village of Blyn, in Clallam County, WA, on a naturally beautiful landscape along the southern shores of the Sequim Bay, approximately 70 miles northwest of Seattle. In this area you will find the Tribal government administration, natural resources, social and community services departments, the Tribal Library, Jamestown Family Dental Clinic, 7 Cedars Resort and Hotel, and the Longhouse M arket Deli \& Fueling Station, and the Jamestown Public Safety and Justice Center . The total Tribal property in both Clallam and Jefferson counties is $1,153.5$ acres. Just as it always has been, an abundance of fish, wildlife and vegetation inhabit this region. The importance and ongoing desire of preservation, conservation, and restoration by the Jamestown S'Klallam people will continue to allow this cohesion of people with their surroundings to exist for many, many more years to come.

This document represents the second Strategic Transportation Safety Plan (STSP) for The Jamestown S'Klallam Tribe and tells the story of the needs and strategies to support the health and well-being of their community. The Plan will also set the stage for future funding applications, safety initiatives, and safety campaigns. Implementation of the safety improvements identified in this Plan will work towards reducing the risk of death and serious injuries that may occur to transportation users within and near tribal lands. The Plan's development and future updates are the responsibility of The Jamestown S'Klallam Tribe Department of Administration with input from the Tribe's Safety Partners.

One of the goals of the Jamestown S'Klallam STSP is to raise awareness about transportation safety by providing crash data that supports the prioritization of needed transportation safety improvements. The focus is on the specific transportation network affecting safe ingress and egress to and from Tribal facilities and the community. The STSP will be used as a tool to apply for and justify future Tribal Transportation Plan Safety Funding and other grant funding.

## PROCESS

## Piandevelopment

The Jamestown S'Klallam Tribe issued a Request for Proposal for a Strategic Transportation Safety Plan Update (STSP) in May 2020. Red Plains Professional was selected for the project; the contract was signed and executed June 2020. Crash data received from Washington State Department of Transportation (WSDOT), analyzed and mapped. The STSP study area includes roadways connecting Jamestown S'Klallam Tribal Lands, Tribal Enterprises, Tribal Government and main community housing areas. The 2016 study area included main arterials: US 101 M P 250-295, SR 19 M P 0-14, SR 20 M P 0-12, SR 116 M P 0-9, SR 104 M P 0-13, Anderson Lake Road, and Oak Bay Road. The 2020 study area was updated to include all Tribal Transportation Program Inventory (TTP) and non-TTP routes connecting to main tribal properties, and main arterials: US 101 M P 250-295, SR 19 M P 0-14, SR 20 M P 0-6.3, SR 116 M P 0-2, SR 104 M P 0-13, Anderson Lake Road, Center Road, and Oak Bay Road.


All project data is viewable with the following Web M apping Application: https://red-plains.xyz/JamestownSKlallam

## SAFEIY StakHhoIDERS

The following entities contributed to this plan. The partnerships developed during this process represent good resources for the Tribe, as the plan is evaluated, implemented and updated.

Stakeholders were contacted, sent the Web Mapping Application with all crash data and a copy of the Emphasis Areas. Both the Clallam and Jefferson County Contacts were appreciative to receive the information and expressed appreciation for the continued cooperation with the Jamestown S'Klallam Tribe. They identified several areas where they might be able to collaborate on some of the suggested improvements and would be contacting Annette Nesse with the Tribe directly. See Appendix D for Clallam County 2021-2026 Transportation Improvement Program (TIP) and Appendix E for Jefferson County 2021-2026 Transportation Improvement Program (TIP).

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Jamestown S'Klallam Tribe
- Tribal Leadership
- Tribal Staff:
- Transportation Program Manager
- Planner
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State of Washington

- Washington State Department Of Transportation (WSDOT)

City of Sequim

- Sequim Police Department

Clallam County

- Sheriff
- Planning Department

Jefferson County

- Sheriff
- Planning Department


## EXISTING EFFORTS

## Jamestown S'Klallam Tribe

The Tribe is dedicated to the betterment of transportation safety. These documents address a variety of safety concerns the Tribe has with their transportation system in and around the Tribal properties, facilities and roads accessing them. The main safety concern is that US 101 divides the North and South Tribal campuses and enterprise properties and there are serious challenges that exist with access to and from US 101. The activities, programs, projects and policies listed below, to address transportation safety, were completed. Additionally, the Jamestown S'Klallam Tribal Council and Administration has adopted high standards and expectations for all development projects, requiring consideration of transportation safety. They dedicate significant effort to enhance the environment and its safety for both Tribal citizens and the traveling public.

- A Roadway Safety Audit (RSA) conducted, in April 2014, on intersections with US 101, M P 267 - M P 274.6, reviewed fifteen intersections and developed countermeasures to improve the safety and reduce the crashes at each intersection. As a result, the realignment of the Chicken Coop Road/Zaccardo Road/US 101 intersection was completed in 2018, a partnership between WSDOT and the Jamestown S'Klallam Tribe (See Appendix A - Jamestown S'Klallam SR 101 RSA).
- US 101, East Sequim Bay Road Access Point Intersection Justification Report - September 2009
- Intersection Justification Report Chicken Coop Road and Zaccardo Road Realignment Traffic Analysis M arch 2012
- Traffic Analysis Report for the Jamestown S'Klallam Tribe Long Range Transportation Plan - August 2014
- 2014 Tribal Transportation Program Roadway Inventory \& Long Range Transportation Plan - March 2016
- Olympic Discovery Trail Development and Enhancements
- Old Blyn Highway Traffic Calming Project - road and campus improvements (with pedestrian safety focus) - completed in 2014
- The US 101 Tribal Pedestrian Underpass Project - completed in 2004
- Jamestown S'Klallam Long Range Transportation Plan - completed in 2016


## Washington State Transportation Improvement Projects (STIP) 2020-2023

The 2020-2023 Statewide Transportation Improvement Program (STIP), approved in January 2020, as required by the Federal Transportation Act. Approximately 1,200 statewide transportation improvement projects utilizing \$3.3 billion in federal funds are in the 2020-23 STIP statewide, representing Washington's highest priority projects.

The STIP is a four-year, fiscally constrained prioritized multimodal transportation program of state, local, tribal, and public transportation (transit) projects, which includes highways, streets, roads, railroads, transit-hubs, park-andride lots, bridges, sidewalks, bike lanes, ferry terminals, trails and safety projects funded with federal, state, tribal and local sources. The STIP is a calendar year document, developed on an annual basis, with monthly updates from January through October. The STIP comprises local, metropolitan and regional transportation improvement programs (TIPs). Through state, metropolitan, regional, tribal and local planning processes, projects are identified. An environment of community engagement is woven into each stage of the planning process merging public dialogue forums with practical solutions to deliver transportation projects that "fit" into the communities and augment their transportation needs. Projects programmed in the STIP are the highest priority for the available funding, to preserve and improve the state's transportation network and achieving the national goals established in the M oving Ahead for Progress in the 21st Century Act (M AP-21) and continued in the Fixing America's Surface Transportation Act (FAST). Only those projects programmed in the approved STIP are allowable to utilize federal funds by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). https://wsdot.wa.gov/LocalPrograms/ProgramM gmt/STIP.htm

The 2020-23 STIP has 44 projects- with 4 specifically addressing transportation safety were in the Jamestown S'Klallam study area. Project 310101E, US 101 - M orse Creek Vicinity - Safety Improvements is currently in progress.

| Washington State Transportation Improvement Projects (STIP) 2020-2023 Jamestown S'Klallam STSP Study Area |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Project \# | Project Title | Description | Region | County | $\begin{array}{\|c} \hline \text { Subprogram } \\ 1 \\ \hline \end{array}$ | $\begin{array}{c\|} \hline \text { Subcategory } \\ 1 \\ \hline \end{array}$ | Add Date | Date Complete |
| 310101E | US 101/Morse Creek Vicinity Safety Improvements | Through a statewide analysis, two locations within the project limits have been identified as Collision Analysis Locations (CAL). | Olympic | Clallam | Safety | Collision Reduction | 2020-09-21 | 2021-07-15 |
| 310101 V | US 101/Vic Deer <br> Park Rd to <br> Dungeness River <br> Br - Install Cable Barrier | Through a statewide analysis, it has been determined that placing median barrier on limited access divided highways is a cost effective method of reducing the severity of cross over collisions. | Olympic | Clallam | Safety | Collision Prevention | 2019-10-28 | 2020-03-12 |
| 310153E | US 101/Golf Course Rd to N of W Uncas Rd Rumble Strips | Collision data indicates run off the road incidents occur along higher speed highways. By installing shoulder rumble strips or profiled plastic line, the frequency of run off the road incidents may be reduced. | Olympic | Clallam, Jefferson | Safety | Collision Prevention | 2021-12-20 | 2022-09-30 |
| 310401 D | SR 104/Paradise Bay-Shine Rd Intersection Safety Improvement | The intersection of SR 104/Shine Road is an Intersection Analysis Location (IAL) for the year 2016. 90\% of the crashes at this intersection were entering at angle type crashes from Paradise Road. This project will provide intersection control. | Olympic | Jefferson | Safety | Collision Reduction | 2021-10-04 | 2022-09-20 |

Figure 1 - Washington State Transportation Projects (STIP) 2020-2023 within study area.

## US 101 - M orse Creek Vicinity - Safety Improvements - Construction beginning spring 2021

'US 101 between Sequim and Port Angeles is a main arterial highway that connects Olympic Peninsula travelers, freight and local businesses. At M orse Creek specifically, the existing roadway alignment has seen several crashes over the years and needs to be addressed to improve the safety for all travelers. In collaboration with local stakeholders and elected officials, this project will improve safety by constructing a raised, landscaped median, implementing a reduced speed limit to 40 mph and other proven traffic calming measures to reduce the probability of median cross-over incidents and severity of crashes along this curved highway.' https://wsdot.wa.gov/projects/us101/morse-creek/home


Figure 3 - Project Location Map (Source WSDOT).

Figure 2 - Design Concept (Source: WSDOT)

## MOTOR VEHICLE CRASH DATA REVIEW AND ANALYSIS

The STSP update study area includes roadways connecting Jamestown S'Klallam Tribal Lands, Tribal Enterprises, Tribal Administration and main community housing areas. The study area includes all Tribal Transportation Program Inventory (TTP) and non TTP routes connecting to main tribal properties, and main arterials: US 101 M P 250-295, SR 19 M P 0-14, SR 20 M P 0-6.3, SR 116 M P 0-2, SR 104 M P 0-13, Anderson Lake Road, Center Road, and Oak Bay Road.


The data source for the following analysis was the WSDOT Crash Data for the timeframe January 1, 2014 to December 31, 2019. All project data is viewable with the following Web Mapping Application: https://red-plains.xyz/JamestownSKlallam.

During the 6 -year period from 2014 to 2019 within the study area, a total of 2,842 reported crashes resulted in 25 fatality crashes, 85 major (suspected serious) injury, 801 minor injury crashes, and 1,885 property damage only crashes. In comparison, the 2016 STSP reported a 4-year period from 2010-2013, a total of 1,237 reported crashes resulted in 7 fatality crashes, 202 major injuries, 282 minor injuries and 730 property damage only crashes. See Crash Severity Sequim and Blyn M ap in Appendix B for distribution of crashes in the main tribal community. Traffic volumes increased in Blyn WA from 14,000 in 2013 to 17,000 in 2019, a 21\% increase.

The statistics on the following page tell the story of crashes occurring within the Jamestown S'Klallam Transportation System.

## CrashFactors

- 2017 reported the highest number of all crashes with 501.2014 reported the lowest number with only 437. Trend is showing increase in crash frequency throughout the timeframe. Same trend as in 2016 plan.
- $40 \%$ of all crashes involved 1 vehicle, less than the $47 \%$ in 2016 plan.
- $54 \%$ involved 2 vehicles, higher than the $47 \%$ in 2016 plan.
- $32 \%$ of all crashes resulted in either injury or fatality, 25 (1\%) fatalities reported. Lower than the $40 \%$ in 2016 plan. Percentage of fatalities was the same, although numbers of fatalities were higher 25 vs 7 .


Figure 4 - All crashes by Year percentiles.


Figure 6-All Crash Mix percentiles.


Figure 5-All crashes by Year totals.


Figure 7-All Crash Severity percentiles.

- $25 \%$ of crashes were Rear-End, the highest reported crash type in both 2014-2019 and 2010-2013 data sets.
- $12 \%$ of crashes involved Animal/Wildlife, 5\% lower rate than $17 \%$ reported in 2016 plan.
- 30 crashes involved Pedestrian, and 27 involved Pedalcyclist, 2\% of all crashes. There were 18 pedestrian/pedalcyclist crashes, $1 \%$ of all crashes in the 2016 plan.


Figure 8 - All Crash Type percentiles.

## EnMRONMENT FACIORS

- $30 \%$ of all crashes occurred at night or in low light conditions. The same as in 2016 plan.
- $28 \%$ of all crashes occurred in Ice, Snow, Slush or Wet driving conditions. Higher than in 2016 plan at $25 \%$.


Figure 9-All Light Conditions percentiles.


Figure 10-All Surface Conditions percentiles.

## Roadway Factors

- $48 \%$ of all crashes occurred at or were related to Intersections, Driveways or Roundabouts. Same as in 2016 plan.
- $43 \%$ of all crashes occurred on roadway geometries of Grade (Hill), Sag, Hillcrest or Curve. Not reported in 2016 plan.


Figure 11 - All Crash Location percentiles.


Figure 12-All Roadway Geometry percentiles.

## DRIVERFACTORSANDROADWAY DEPARIURE

- $25 \%$ of all crashes involved Drivers 65 years of age or older age group at $25 \%$. Higher than the $16 \%$ in the 2016 plan.
- $18 \%$ of all crashes involved Inattention as the primary human factor preceding crash. Higher than the 6\% in the 2016 plan.
- $6 \%$ of all crashes, $8 \%$ of injury crashes and $28 \%$ of fatal crashes involved drivers Under Influence of Alcohol, Drugs or Medication. About the same as in the 2016 plan at $5 \%$.
- $10 \%$ of all crashes and $13 \%$ of injury crashes. This was lower than the $19 \%$ in the 2016 plan.


Figure 13-All Driver Age percentiles.

- $9 \%$ of all crashes, $11 \%$ of injury crashes and $4 \%$ of fatal crashes involved Fail to Yield. Less than the $12 \%$ in 2016 plan.
- $8 \%$ of all crashes involved Follow Too Closely. 9\% in the 2016 plan.
- 6\% of all and injury crashes, and 4\% of fatal crashes involved Distracted Driving. Not studied in 2016 plan.
- $5 \%$ of all crashes, $6 \%$ of injury crashes and $16 \%$ of all fatal crashes involved drivers Apparently Asleep, Fatigued or III. Not studied in 2016 plan
- $11 \%$ of all crashes and $25 \%$ of all fatal crashes involved Other Improper Driving, Parking Violation. Not studied in 2016 plan.


Figure 14 - All Human Factor Preceding Crash percentiles.


Figure 15 - All Fatal or Injury and Primary Factor Preceding Crash Totals.

The FHWA (Federal Highway Administration) defines Roadway Departure as a crash which a vehicle crosses an edge line, center line or otherwise leaves the traveled way. For this study, Roadway Departure crashes include those identified by WSDOT as Crash Types involving lane departure: Head-On, Over Embankment-No Guardrail Present, Overturned, Sideswipe, Struck Object, Struck Parked Vehicle and Primary Human Factor Preceding Crash of Over Center Line.

- $36 \%$ crashes involved Roadway Departure. $33 \%$ in 2016 plan.
- $76 \%$ of all fatal crashes and $56 \%$ of Suspected Serious injury crashes were Roadway Departure. Not studied in 2016 plan.

Roadway Departure 2014-2019


Figure 16-All Crash Type percentiles.


Figure 17 - Severity - All crashes vs Roadway Departure Involved totals.

- $11 \%$ of all crashes involved impaired driving. This is double the $5 \%$ in 2016 plan.
- $54 \%$ of impaired drivers were Under Influence of Alcohol, Drugs or M edication, $46 \%$ were Asleep, Fatigued or III. Not studied in 2016 plan
- $20 \%$ of impaired drivers were $65+$ or $25-34$ years of age. This compares to $5 \%$ for age $65+$ and $22 \%$ for $25-34$ on 2016 plan.
- $56 \%$ of all fatal crashes, $14 \%$ of injury crashes and $11 \%$ of all crashes involve Driver Impairment (Apparently Asleep, Fatigued, III, or Under Influence of Alcohol, Drugs or M edication). Not studied in 2016 plan.


Figure 18-All Driver Impairment percentiles.


Figure 19-All Driver Impairment Type percentiles.


Figure 20 - All Driver Impairment percentiles.


Figure 21 - Injury or Fatal Crash and Driver Impairment totals.


Figure 22 - All Age and Driver Impairment percentiles.


Figure 23 - All Driver Impairment percentiles.

## RISKY DrivingBehavors

The following factors were used to define Risky Driving Behaviors (RDB), Primary Human Factor Preceding Crash due to the high occurrence of crash fatalities or injuries: Inattention, Driver Impairment (Under Influence of Alcohol, Drugs or Medication or Apparently Asleep, Fatigued or III), Speeding, Fail to Yield, Follow Closely, and Distracted Driving. Further analysis was completed on RDBs to understand these crashes. Not studied in 2016 plan.

- $62 \%$ of all crashes were RDB's, including $56 \%$ of fatal crashes and $72 \%$ of injury crashes.
- $24 \%$ of all crashes were Both Roadway Departure and RDB's, including $48 \%$ of fatal crashes, and $24 \%$ of injury crashes.

Severity-All Crashes VS RDB's VS Roadway Departure VS
Roadway Departure and RDB's 2014-2019


Figure 24 - Severity - All Crashes VS RDB’s VS Roadway Departure totals.


Figure 25-All Fatal and Injury crashes - Risky Driving Behavior totals.


Figure 26 - All Driver Age and Risky Driving Behavior totals.

- Drivers 65 or older had the highest rate of crashes involving Fail to Yield at 45\%, Inattention at 28\%, and Driver Impairment-Apparently Asleep, Fatigued or III at 34\%.
- Drivers under 25 and 25-34 had the highest rate of crashes involving Follow Too Closely at 25\% each.
- Drivers under 25 had the highest rate of crashes involving Speeding at 26\%, and Distracted Driving at 23\%.
- Drivers 25-34 had the highest rate of crashes involving Driver Impairment-Under Influence of Alcohol, Drugs or Medication.


Figure 27 - All Fail to Yield and Driver Age percentiles.


Figure 29-All Inattention and Driver Age percentiles.


Figure 28 - All Follow Too Closely and Driver Age percentiles.


Figure 30-All Speeding and Driver Age percentiles.


Figure 31 - All Under Influence of Alcohol, Drugs or Medication and Driver Age percentiles.


Figure 32 - All Distracted Driving and Driver Age percentiles.


Figure 33 - All Apparently Asleep, Fatigued or III and Driver Age percentiles.

## VUINERABLEROADUSERS

Vulnerable Road Users include pedestrians, pedalcyclists, motorcyclists and road users 65 or older. Vulnerable road users are more exposed than other drivers operating vehicles, making them more susceptible to injury in the event of a crash. Not studied in 2016 plan.

- $28 \%$ of all crashes involved Pedestrian, Pedalcyclist, M otorcyclist or 65 or older road users.
- $41 \%$ of crashes involving Vulnerable Road Users resulted in injury or death. Only $34 \%$ of all crashes resulted in injury or death, the rates are much higher for Vulnerable Road Users.
- There were 13 fatal crashes involving Vulnerable Road Users. 6 (46\%) of the fatal crashes involved Drivers 65 or older.
- Drivers 65 or older represent $24 \%$ of all drivers and were in $84 \%$ of crashes involving Vulnerable Road Users, with $46 \%$ of fatal crashes, $65 \%$ of suspected serious injury, $78 \%$ of minor or possible injury.


Figure 34 - Crashes involving Vulnerable Road User percentiles.

Figure 36-Crash Severity - Vulnerable Road User percentiles.


Figue 36 - Crash Severity - Vulnerable Road Userpercentiles.


Figure 35 - Crashes only Involving Vulnerable Road User percentiles.

Figure 38 - Fatality crash and Vulnerable Road User totals.


Figure 39 - Crashes only Involving Vulnerable Road User percentiles.


Figure 40-Fatal crashes Involving Vulnerable Road Users and RDBs totals.


Figure 41 - Fatal crashes Involving Vulnerable Road Users and RDBs totals.

## EMPHASIS AREAS

After reviewing the available data, 6 emphasis areas are selected for added attention in the transportation safety efforts of the Jamestown S'Klallam Tribe. These emphasis areas represent the most significant opportunities to accomplish the Tribe's vision:

## Emphasis Area 1 - Vulnerable Road Users

Emphasis Area 2 - Risky Driving Behaviors and Roadway Departure
Emphasis Area 3 - Rear-End Crashes
Emphasis Area 4 - Wildlife/Animal Crashes
Emphasis Area 5 - US 101 and Intersections with Local Roads
Emphasis Area 6 - Blyn Corridor Road improvements
Each emphasis area is described below and accompanied by a list of strategies that, if implemented, are expected to reduce the associated crashes and enhance safety. Each strategy is assigned to a department or task force that is responsible for implementation and evaluation.

## EvphasisArea 1 - VUINerabieRoadUsers

## DESCRIPTION

Vulnerable Road Users include pedestrians, pedalcyclists, motorcyclists and drivers 65 or older. They are of concern to the Tribe. There is an increase in pedestrian and pedalcyclist usage on the Olympic Peninsula with the recent enhancements to the Olympic Discovery Trail.

From 2014-2019, 30 crashes involved pedestrians and 27 involved pedalcyclist ( $2.0 \%$ of total crashes). Of the 57 crashes, 3 were fatalities, 4 were serious injuries, 48 were minor injuries and 2 resulted in no injury.

In the 2016 Plan, 8 crashes involved pedestrians and 10 involved pedalcyclists ( $1.4 \%$ of total crashes). Of the 18 crashes, 4 were serious injuries, 13 were minor injuries and 1 resulted in no injury.

- $28 \%$ of all crashes involved Pedestrian, Pedalcyclist, M otorcyclist or 65 or older road users.
- $41 \%$ of crashes involving Vulnerable Road Users resulted in injury or death. Only $34 \%$ of all crashes resulted in injury or death, the rates are much higher for Vulnerable Road Users.
- There were 13 fatal crashes involving Vulnerable Road Users. 6 (46\%) of the fatal crashes involved Drivers 65 or older.
- Drivers 65 or older represent $24 \%$ of all drivers and were in $84 \%$ of crashes involving Vulnerable Road Users, with $46 \%$ of fatal crashes, $65 \%$ of suspected serious injury, $78 \%$ of minor or possible injury.


Figure 42 - Crashes involving Vulnerable Road User percentiles.


Figure 43 - Crashes only Involving Vulnerable Road User percentiles.

Crash Severity-Vulnerable Road User
2014-2019


Figure 44 - Crash Severity - Vulnerable Road User percentiles.

## Crash Severity-All Crashes 2014-2019



Figure 45 - Crashes Severity - All Crashes percentiles.


Figure 46 - Fatality crash and Vulnerable Road User totals.


Figure 47 - Crashes only Involving Vulnerable Road User percentiles.


Figure 48 - Fatal crashes Involving Vulnerable Road Users and RDBs totals.

Injury Crash - Risky Driving Behaviors and VuInerable Road User 2014-2019


Figure 49 - Injury crashes Involving Vulnerable Road Users and RDBs totals.

Additional data analysis will be necessary to determine trends in the pedestrian and bicycle crashes. The following common factors need to be identified:

- Location Factors. Were there any hazards that need to be addressed in the crash locations?
- Human Factors. What were the human factors that contributed to the crash?
- Environmental Factors. What were the environmental factors in play?

This emphasis area identified in the Tribe's 2016 Long Range Transportation Plan as Prioritized Project Number 8:
8. Comprehensive Pedestrian and Bicycle Plan (System Wide): With the many-programmed Tribal and area development plans, it is apparent that the connection of the tribal community members to the local goods and services (as supported by foot or bicycle travel) requires significant planning, expansion, and coordination. The pedestrian plan must focus on the condition rating of the existing trails and pathways utilized by the tribal citizens (youth to elders) to access services by foot. Additional study and community involvement will be required to also identify the desired connections that currently do not exist. In this plan, recreational trails should be strongly considered not only for the health and benefit of the Tribal and non-Tribal local communities but also for potential enhancement of commercial developments for the visiting public. Walking, hiking and biking trails provide a great opportunity for Tribal community enhancement by incorporating cultural education and preservation through interpretive signage, planned bench seating location with educational placards and interactive stations, the display of traditional tribal art, and environmental enhancement and education of plant and animal species. For extended hours of operation and use, path lighting should certainly be considered particularly here in the Pacific NW where we experience short days and overcast low light conditions seasonally. The plan should strongly consider connectivity to other internal and external paths and trails. There are many planned phases, for instance, of the Olympic Discovery Trail, which are identified as separate projects. In instances where the potential exists for vehicle-pedestrian conflicts, well-designed safe crossings and walkways should be implemented to discourage accidents. A significant challenge that will be faced by the Tribe through the study will be to gain project support and buy-in from those local, state, and regional agencies responsible for many of the roads traveling through the pedestrian trails and pathways transportation system. The LRTP identified significant challenges to pedestrian safety such as the Tribal community, administration, Tribal services, and economic develop areas bisection on either side of US101. Several local and county roads will likely require pedestrian facility upgrades required to improved driver education and warning of the presence of pedestrians and pedestrian facilities. Traffic calming measures must be implemented to warn the unexpecting vehicle driver of the proximity to the tribal community and increased likeliness of pedestrian traffic. Where possible and practical, designs must be implemented to reduce the potential for conflicts even if that includes the development of pathways and trails that do not share the same alignments of existing roads. This project is one of the highest priorities of the Tribal Public and Administration as supported by the recent pedestrian improvements near the tribal administration area, tunnel under US101, and extensions of the ODT. The effort must continue as new area developments and expansion occurs. The Tribe may utilize TTP funding to support this continued pedestrian transportation safety effort which significantly enhances the community and area.

## GOALS

Reduce the number of pedestrian and bicycle involved crashes by 10\% by 2025.

## PEDESTRIAN AND BICYCLE STRATEGIES

- Conduct a multidisciplinary Road Safety Audit (RSA) to analyze the locations identified as high pedestrian crash areas or areas with increased risk of crashes due to high pedestrian use and congestion. (Strategy Champion: Jamestown S'Klallam Transportation and Planning staff (JST Staff)
- Coordinate with the State DOT Safe Routes to School Program to develop a school walking plan. (Strategy Champions: JST Staff)
- Develop a Pedestrian and Bicycle Plan. (Strategy Champion: JST Staff)
- Continue to implement Pedestrian safety improvements to the transportation network as the Tribe has been through the last 10 years. (Strategy Champion: JST Staff)
- Seek funding to design pedestrian facility enhancements. (Strategy Champion: JST Staff).
- Apply for a Federal Highway Tribal Transportation Safety Grant in 2022 to secure funding for design and construction of improvements. (Strategy Champion: JST Staff)
- Work with Clallam County on the Olympic Discovery Trail (ODT) to develop a connector trail through Tribal Property on the East side of Diamond Point Road at the intersection with US 101 to tie in with a section, recently completed by the county, of the ODT that ties into Old Gardiner Road. This would tie into the existing ODT at the trailhead on the Westside of Diamond Point Road. (Strategy Champion: JST Staff and Clallam County Transportation Program M anager)


## OLDER DRIVER AGE 65+ STRATEGIES

- Implement education program for the community encouraging enrollment in driving safety classes such as AAA's Roadwise Driver Course. These classes focus on tips and techniques for addressing factors typical among aging drivers including changing vision, reduced response times, and effects of prescription medications. (Strategy Champions: JST Staff, Sequim City Police, WSP)


## EvphasisArea2- RIsky DrivngBehavorsand Roadway Depariure

## DESCRIPTION

Unsafe behaviors - Risky Driving Behaviors are becoming an accepted part of the culture on many tribal roads (based on an increase in crashes) and often cause serious injury or death. When analyzing the data, the Jamestown S'Klallam Tribe is, unfortunately, no exception.

Reducing fatal and serious injury crashes can be accomplished through identifying and deterring unsafe or risky behaviors by drivers and other transportation users, and preventing roadway departure.

The FHWA (Federal Highway Administration) defines Roadway Departure as a crash which a vehicle crosses an edge line, center line or otherwise leaves the traveled way. For this study, Roadway Departure crashes include those identified by WSDOT as Crash Types involving lane departure: Head-On, Over Embankment-No Guardrail Present, Overturned, Sideswipe, Struck Object, Struck Parked Vehicle and Primary Human Factor Preceding Crash of Over Center Line.

- 36\% crashes involved Roadway Departure. Compared to $33 \%$ in 2016 plan.
- $76 \%$ of all fatal crashes and $56 \%$ of Suspected Serious injury crashes were Roadway


Figure 50-All Crash Type percentiles. Departure.

The following Primary Human Factor Preceding Crash factors were used to define Risky Driving Behaviors (RDB) due to the high occurrence of crash fatalities or injuries: Inattention, Driver Impairment (Under Influence of Alcohol, Drugs or Medication or Apparently Asleep, Fatigued or III), Speeding, Fail to Yield, Follow Closely, and Distracted Driving. RDB's can have devastating consequences as a result of these behaviors are evident in the Crash data and result in severe consequences. WSDOT Crash data showed that from 2014-2019, 1,763 or $62 \%$ of all crashes involved RDB's, including $56 \%$ of fatal crashes and $72 \%$ of Injury crashes. Inattention and distracted driving was the highest RDB reported by far, involving $24 \%$ of All Primary Human Factors Preceding.


Figure 51 - All Human Factor Preceding Crash percentiles.


Figure 52 - Severity - All Crashes VS RDB's VS Roadway Departure totals.


Figure 53-All Fatal and Injury crashes - Risky Driving Behavior totals.

- Drivers 65 or older had the highest rate of crashes involving Fail to Yield at $45 \%$, Inattention at $28 \%$, and Driver Impairment-Apparently Asleep, Fatigued or III at 34\%.
- Drivers under 25 and 25-34 had the highest rate of crashes involving Follow Too Closely at $25 \%$ each.
- Drivers under 25 had the highest rate of crashes involving Speeding at $26 \%$, and Distracted Driving at $23 \%$.
- Drivers 25-34 had the highest rate of crashes involving Driver Impairment-Under Influence of Alcohol, Drugs or Medication.


Figure 54 - All Driver Age and Risky Driving Behavior totals.


Figure 55 - All Fail to Yield and Driver Age percentiles.


Figure 56 - All Follow Too Closely and Driver Age percentiles.


Figure 57 - All Inattention and Driver Age percentiles.


Figure 59 - All Under Influence of Alcohol, Drugs or Medication and Driver Age percentiles.


Figure 58-All Speeding and Driver Age percentiles.


Figure 60 - All Distracted Driving and Driver Age percentiles.


Figure 61 - All Apparently Asleep, Fatigued or III and Driver Age percentiles.

## GOALS

Reduce Fatalities and Serious Injuries that involve Roadway Departure and Risky Driving Behaviors by at least 10\% by 2025.

## STRATEGIES

- Conduct a Systemic RSA that evaluates Roadway Departure risks including roadway condition, visibility, striping and signage in the community. The RSA should specifically evaluate locations with reported crashes involving Roadway Departure including Crash types: Head-On, Over Embankment-No Guardrail Present, Overturned, Sideswipe, Struck Object, and Struck Parked Vehicle. (Strategy Champions: JST Staff, City of Sequim, Clallam and Jefferson Counties, Sequim City Police, WSP)


## ENFORCEMENT AND POLICY STRATEGIES

- Enforce Laws related to Inattention, Driver Impairment (Under Influence of Alcohol, Drugs or Medication or Apparently Asleep, Fatigued or III), Speeding, Fail to Yield, Follow Closely, and Distracted Driving. Renewed police patrols and presence at community concern locations for driving enforcement. (Strategy Champions: City of Sequim Police, WSP)
- Create a task force to evaluate, refine, and improve laws and policies for traffic enforcement in the community. The task force should specifically evaluate laws and policies concerning the following topics: Risky Driving Behaviors and Roadway Departure. Risky Driving Behaviors include Inattention, Driver Impairment (Under Influence of Alcohol, Drugs or M edication or Apparently Asleep, Fatigued or III), Speeding, Fail to Yield, Follow Closely, and Distracted Driving. (Strategy Champions: JST Staff, Clallam and Jefferson Counties, Sequim City Police, WSP)
- Intersection and Speed M anagement. Develop a policy for conducting studies to monitor intersection-driving behaviors and set speed limits. (Strategy Champions: JST Staff, Clallam and Jefferson Counties, Sequim City Police, WSP)


## EDUCATION AND SAFETY CULTURE STRATEGIES

- Conduct additional data analysis to determine target audience for educational efforts. The data in this plan identifies that a significant percentage of crashes occurring are caused by drivers under 25 years of age, 25-34 and 65 years of age or older. This would be the initial target audience for a safety campaign marketed to the community to raise awareness that these behaviors are unacceptable. (Strategy Champions: JST Staff, City of Sequim, Clallam and Jefferson Counties, Sequim City Police, WSP)
- Create a media campaign using billboards and displays at the Tribe's Casino and Gas Station to encourage drivers to adopt a culture of safe driving. (Strategy Champions: JST Staff, Casino Public Relations)
- Implement an education program for the community that involves safety signage and a mock crash like the "Every 15-M inutes" program. (Strategy Champions: Sequim City Police, WSP)



## EnphasisArea3- Rear-EndCrashes

## DESCRIPTION

Approximately $25 \%$, or 709 , of all crashes were rear-end and were primarily caused by: speeding, following too close, and/or driver inattention. Of the 709 crashes, 270 serious/minor injuries (38\%) occurred.

## GOAL

Reduce rear end crashes by $10 \%$ by 2025.

## STRATEGIES

- Develop a media campaign to emphasize: Slowing Down, Backing Off, and Paying Attention (Strategy Champions: JST Staff, WSP)
- Work with the WSP to increase enforcement patrols to reduce speeding. (Strategy Champions: JST Staff, WSP)
- Work with WSDOT to highlight signage needs on curves and areas within the Jamestown S'Klallam Study area. (Strategy Champions: JST Staff WSDOT)


## EmphasisArea4- Widifed AnimalOrashes

## DESCRIPTION

In the six years analyzed from January 2014 to December 2019, 331 reported crashes (12\%) occurred involving animals and vehicles. While this percentage is lower than in 2016 plan at 233 crashes (19\%) the actual number of crashes is higher by 98 crashes due to an increase in the ADT. Vehicle wildlife crashes nationwide cause approximately 200 deaths per year and the estimated cost to society is $\$ 1.2$ billion per year. Research completed by the Western Transportation Institute at M ontana State University calculated the average total costs associated with an animal/vehicle crash for two species: $\$ 7,890$ for deer and $\$ 17,100$ for elk. Based on these numbers, the combined cost of these crashes is approximately $\$ 4.1$ million per year. The focus of this emphasis area is to identify how to reduce animal/vehicle crashes and to minimize the consequences when they occur. Two specific sections of US 101 were identified within 6.0 miles either side of Blyn, WA; approximately M P 266 to 270 ( 25 crashes) and M P 270.5 to 276.5 ( 20 crashes).

## GOAL

Reduce crashes involving animals within reservation service area by 10\% by 2023.

## STRATEGIES



- Conduct a Road Safety Audit (RSA) on those areas with a higher incidence of animal/ vehicle crashes (Strategy Champion: JST Staff)
- Work with the WSDOT and Washington Department of Fish and Wildlife (WDFW) to delineate and sign these areas to warn drivers of the hazards (Strategy Champion: JST Staff)


## EMPHASISAREA5- US101 ANDINIERSECIIONSWITHLOCALROADS

## DESCRIPTION

A Road Safety Audit (RSA) was performed in April 2014 on intersections with US 101, from MP 267 to M P 274.6. The RSA team reviewed fifteen intersections and developed countermeasures to improve the safety and reduce the crashes at each intersection. The realignment of the Chicken Coop Road/Zaccardo Road/US 101 intersection, completed in 2018, through a partnership between WSDOT and the Jamestown S'Klallam Tribe, was one of the projects. (See Appendix A - Jamestown S'Klallam SR 101 RSA).

Current crash data (2014-2019) was analyzed and compared with the crash data set (2009-2013) used in the 2014 RSA study for eight (8) of those intersections. The data sets included intersection, driveway or related crashes. Overall, the trend shows on increase in the total number of crashes, from thirty-two (32) from 2009-2013 to sixtyfour (64) from 2014-2019. This is an annual average increase of 7 to 10.5 crashes per year from 2009-2019. Fatal/Injury crashes changed from 1 fatality and nineteen (19) injuries from 2009-2013, to no fatalities and twentynine (29) injuries from 2014-2019. Five of the intersections showed significantly higher crash rates: Palo Alto Rd, Louella Rd, Sophus Rd, Knapp Guiles Rd, and Chicken Coop-Diamond Point Rd. These intersections remain a major concern to the Tribe. The increase in injury crashes at these intersections further reinforces the need for improvements to reduce crashes.

| US 101 Roadway Safety Audit Intersection Crash History (2009-2013) vs Current Trends (2014-2019) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cross road with US 101 | Crash History 2009-2013 (5 years) |  |  |  |  |  |  |  |  | Crash History 2014-2019 (6 years) |  |  |  |  |  |  |  |  |  |  |  |  |
|  | $\begin{aligned} & y \\ & \frac{1}{Y} \\ & 0 \\ & \# \\ & \# \end{aligned}$ | Severity |  |  | Type |  |  |  |  | $\begin{aligned} & y \\ & \frac{6}{6} \\ & \dot{C} \\ & \# \end{aligned}$ | Severity |  |  | Type |  |  |  |  |  |  |  |  |
|  |  |  | $\xrightarrow[y]{\grave{D}}$ |  | $\begin{aligned} & \frac{0}{0} \\ & \frac{1}{4} \end{aligned}$ | $\begin{aligned} & \substack{0 \\ \frac{1}{0} \\ \underline{\sim} \\ \hline} \end{aligned}$ |  |  |  |  | $\begin{aligned} & \overline{\widetilde{0}} \\ & \text { 节 } \end{aligned}$ |  |  | $\frac{0}{\frac{0}{4}}$ | $\begin{aligned} & \substack{0 \\ \vdots \\ \vdots \\ \underline{1} \\ \hline} \end{aligned}$ |  |  |  | $\begin{aligned} & 8 \\ & \frac{8}{3} \\ & \frac{1}{0} \\ & 0 \end{aligned}$ | 을 <br> 들 | $\begin{aligned} & 0 \\ & \frac{0}{3} \\ & \frac{0}{0} \\ & \dot{0} \end{aligned}$ | $\begin{aligned} & 0 \\ & . \frac{1}{y} \\ & 0 \\ & 0 \end{aligned}$ |
| Palo Alto Rd | 3 | 1 | 2 |  | 2 |  | 1 |  |  | 8 |  | 2 | 6 | 2 |  | 2 | 1 | 1 | 1 | 1 |  |  |
| Louella Rd | 4 |  | 3 | 1 | 2 |  | 2 |  |  | 13 |  | 7 | 6 | 2 | 1 | 5 |  | 2 |  | 3 |  |  |
| Schoolhouse Point In | 3 |  | 2 | 1 |  |  | 2 | 1 |  | 5 |  | 3 | 2 |  |  | 4 |  | 1 |  |  |  |  |
| 7 Cedars Casino Driveway | 4 |  | 1 | 3 | 4 |  |  |  |  | 4 |  | 4 |  | 2 |  | 1 |  |  |  | 1 |  |  |
| Sophus/ Silva Rd | 8 |  | 6 | 2 | 5 | 1 |  | 1 | 1 | 11 |  | 2 | 9 | 6 |  | 1 |  | 1 |  | 1 | 2 |  |
| Pierce Rd | 3 |  | 2 | 1 |  |  | 3 |  |  | 3 |  | 2 | 1 |  |  | 1 |  | 1 |  |  | 1 |  |
| Knapp/ Guiles Rd | 1 |  |  | 1 |  |  | 1 |  |  | 9 |  | 6 | 3 | 2 |  | 4 | 1 | 2 |  |  |  |  |
| Chicken Coop-Diamond Point Rd | 6 |  | 3 | 3 | 2 | 1 | 1 |  | 2 | 10 |  | 3 | 7 | 5 |  | 1 | 1 |  |  | 2 |  | 1 |
| Total \#Crashes | 32 | 1 | 19 | 12 | 15 | 2 | 10 | 2 | 3 | 63 | 0 | 29 | 34 | 19 | 1 | 19 | 3 | 8 | 1 | 8 | 3 | 1 |

Figure 62-US 101 Intersection Crash Data comparison 2009-2019.

## GOAL

Reduce left turn crashes by $10 \%$ by 2025 .

## STRATEGIES

- Work with WSDOT and Clallam County to implement the countermeasures identified in the Jamestown S'Klallam SR 101 RSA. (Strategy Champions: JST Staff, WSDOT, Clallam County Transportation Program Manager)
- Apply for TTPSF funding to assist in the implementation of the improvements. (Strategy Champion: JST Staff)
- Work with WSDOT to add additional signs on curves and areas within the Jamestown S'Klallam Study area. (Strategy Champions: JST Staff, WSDOT)


## EmphasisArea 6- BLyNCorridor Transportationimprovevenis

## DESCRIPTION

Old Blyn Road, M P 272.26, to the west side of the Casino/Resort at M P 270.6 where the Old Blyn Road ties back into US 101 is a very crowded corridor, with very high vehicle and pedestrian use. The area includes the Tribal government campus, Longhouse M arket, and Casino/Hotel complex and many other driver distractions. There is heavy foot traffic within this area as Tribal members and visitors access the many Tribal facilities, creating a potential conflict between pedestrians, pedalcyclists and vehicles. There have been several near misses in the corridor. The realignment of the Chicken Coop Rd and Zaccardo Rd intersection reduced the congestion some, however more work needs to be done.

## GOAL

Improve safe access for pedestrians, pedalcyclists, and vehicles within this corridor by 2023.

## STRATEGIES

- Perform a traffic analysis through comparative analysis of the physical roadway conditions and the traffic, pedestrian and pedalcyclists behavior and movement conditions. The traffic analysis should include intersection level of service during peak hours, traffic volumes, traffic speeds, and general modeled traffic patterns. (Strategy Champions: JST Staff, WSDOT)

Blyn Corridor Road Improvements


## IMPLEMENTATION AND EVALUATION

## The JamesiownSKiallamTransporiationSafeiy Managenent Commitiee

For this plan to be successful, it must be implemented and monitored, revisions to this plan will be necessary, as success will mandate change. The Safety Stakeholders will be interviewed on a yearly basis to discuss the Safety Plan and get their concerns/input. The JST Staff will review the STSP annually to evaluate progress toward each goal, discuss the progress of strategies that are being implemented, and consider any needed revisions/updates to this plan.

## Strateg ImpleventationOhampions

The strategies listed above designate a champion for each strategy and this champion has the lead on implementation of that particular strategy. M any of the strategies may require an implementation plan be created that is separate from this document. As needed, the strategy champions will build an action plan for their strategy that outlines the implementation steps, schedule, and needed resources. The strategy champions will report to JST Staff on their strategy when updates are available or as requested.

## APPENDICES

## AppendixA- JAMEstownSKiallamSR101 RoadSAfety Audit (DigTtal)

# Jamestown S'Klallam <br> SR 101 Road Safety Audit <br> Prepared for <br> Jamestown S'Klallam Tribe 

April 2014

Prepared by
Parametrix

# Jamestown S'Klallam SR 101 Road Safety Audit 

## Prepared for

## Jamestown S'Klallam

1033 Old Blyn Highway
Sequim, WA 98382

Prepared by

## Parametrix

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## CITATION

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4. FINDINGS AND RECOMMENDATION ..... 2

## APPENDICES

A Road Safety Audit Team
B Maps

## ACRONYMS

FHWA
HSM
MEV
MVM
RSA
WSDOT

Federal Highway Adminstration
Highway Safety Manual
million entering vehicles
million vehicle miles
road safety audit
Washington State Department of Transportation

## 1. INTRODUCTION

Jamestown S'Klallam Tribe (Tribe) initiated a road safety audit (RSA) along US 101 between Happy Valley Road (mile post 267) and Chicken Coop/Diamond Point Road (mile post 274.6). The Tribal governmental facilities and main economic enterprises are located adjacent to US 101. The Tribe is interested in improving the safety and mobility of this particular intersection for our Tribal Citizens accessing services, for residents living in the vicinity and for visitors to the Olympic Peninsula.
The RSA is a study that supplements WSDOT past safety improvements along mainline US 101, with the RSA focusing on County roads and driveways intersecting with US 101. The intent of the RSA is to understand the deficiencies and driver behaviors that contribute to collisions, and to identify the best safety improvements to reduce the frequency and severity of collisions in the future.
The Washington State Department of Transportation (WSDOT) has completed safety improvements along US 101 including this stretch of roadway over the past 10 years. These safety improvements were completed in an effort to reduce the collision rate. The eight mile section of US 101 corridor between Happy Valley Road and Diamond Point Road has a rate of 0.71 collisions per million vehicle miles (MVM); however some sections have much higher rates. The mile stretch of roadway for example approaching and departing Chicken Coop Road/Zaccardo Road intersection area has a collision rate of 1.34 per MVM. The state average for a similar roadway is 1.11 collisions per MVM. WSDOT recently reduced the posted speed limit for a portion of the study area from 55 mph to 50 mph to address concerns raised by the public and the Tribe related to near miss collisions, and to address major collisions that resulted in loss of property or injury.

## 2. OVERVIEW OF THE STUDY AREA

The US 101 corridor loops around the Olympic Peninsula and Olympic National Park, providing access to dozens of cities, communities, parks and recreational land uses. The corridor runs through the Clallam, Jefferson, Grays Harbor, and Mason counties. Tourism is one of the Tribe's and the North Olympic Peninsula's primary economic drivers. US 101 supports over 5 million vehicles annually, mainly visitors to Olympic National Park, and to the North Olympic Peninsula's other increasingly popular attractions such as river and saltwater fishing, local community festivals (e.g. Sequim's Lavender Festival, Port Angeles' Crab Festival, etc.), as well as to the nine tribal nations located on the Olympic Peninsula.

Within the nearly eight mile study area, the US 101 corridor land use includes single family residences, commercial, and community center land uses including Jamestown S'Klallam 7 Cedars resort, gas station and deli, and visitor centers.

The study area included the following intersections with US 101:

- Happy Valley Road
- Palo Alto Road
- W Sequim Bay Road
- Barker Road
- Louella Road
- Schoolhouse Point Lane
- Corriea Road
- 7 Cedars Casino Driveway
- Sophus Road
- Chicken Coop-Zaccardo Road
- Blyn Road
- Old Blyn Highway
- Pierce Road
- Knapp/Guiles Road
- Chicken Coop-Diamond Point Road


## 3. ROAD SAFETY AUDIT PROCESS AND TEAM

As described by the Federal Highway Administration (FHWA), an RSA is the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. The RSA identifies potential existing safety issues and opportunities for improvement.
An RSA differs from a standard safety analysis in that it is performed by an independent team of experts representing multiple disciplines, considers human factors (such as driving at excessive speeds or nighttime visibility), and findings are documented in a formal report.
The RSA process includes the following steps and is described in FHWA Road Safety Audit Guidelines (FHWA publication FHWA-SA-06-06).

- Identify project
- Select RSA team
- Conduct start-up meeting
- Collect historical data for collisions and traffic volumes
- Perform field reviews
- Conduct analysis and prepare report
- Present findings to Project Owner
- Prepare formal response
- Incorporate findings

The RSA study team for the Jamestown S'Klallam US 101 project includes a Tribe representative, a WSDOT traffic safety and operations engineer, and three consultant engineers. The engineers completing the audit each have over fifteen years of experience in roadway design or traffic operations analysis.

Clallam County was invited to participate but were unavailable for the field work. Traffic volumes, collision history, and local operational issues were provided by the County to supplement data collected.

## 4. FINDINGS AND RECOMMENDATIONS

The following summarizes for each intersection, the existing conditions and the countermeasures identified by the RSA team. The countermeasures are rated as low/medium/high effort (or cost) and benefit. The level of benefit for some improvements was determined using the Highway Safety Manual (HSM).
The following summary table (Exhibit 1) summarizes the existing issues and opportunities for safety improvements. Exhibits 2 through 16 describe the collision
history (rates, type, and severity), volumes, and countermeasures for the study intersections. The most typical collision types are vehicles rear-ending another vehicle turning from US 101 onto a side road (where a left or right turn pocket did not exist) and collisions as vehicles enter US 101 from side roads. Countermeasures identified include installing left or right turn lanes, and adding illumination. There are a few locations where all capacity improvements are already installed. The countermeasures for these locations could include signalization, closing access, or constructing a roundabout to reduce conflict points and speeds.

Deer and elk regularly cross the US 101 corridor within the study area. Reviewing the collision trends along US 101, collisions with wildlife is a frequent occurrence both at intersections and along US 101 between intersections. However this RSA focuses on vehicular collisions with other vehicles or persons rather than minimizing wildlife collisions.

Exhibit 1. Summary of Existing Conditions and Opportunities

|  |  |  |  | sting | Cond | ition | (X) | and | Opp | ortun |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | S 101 |  |  |  |  |  |  | se |  |
|  | Cross road with US 101 |  |  |  |  |  |  |  |  |  |  |  | $\begin{aligned} & 0.0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & \hline 0 \end{aligned}$ |
| 1 | Happy Valley Rd | x | 0 | 0 | 0 |  |  |  | 0 |  |  |  |  |
| 2 | Palo Alto Rd | x | 0 | 0 | 0 |  |  |  | 0 |  |  |  |  |
| 3 | W Sequim Bay Rd | 0 | 0 |  |  |  |  |  | 0 |  |  |  |  |
| 4 | Barker Rd | x | 0 | 0 | 0 |  |  |  |  | 0 |  |  |  |
| 5 | Louella Rd | $x$ | 0 | 0 | 0 |  |  | 0 |  |  |  |  |  |
| 6 | Schoolhouse Point Ln | $x$ | 0 | 0 | 0 |  |  |  |  |  |  |  |  |
| 7 | Corriea Rd | x | 0 | 0 | 0 | 0 |  |  |  |  |  |  | 0 |
| 8 | 7 Cedars Casino Driveway | x | x | x | x | x |  |  |  |  |  | 0 |  |
| 9 | Sophus Rd | x | x | x | x | x |  |  |  |  |  | 0 |  |
| 10 | Chicken Coop-Zaccardo Rd | $x$ | 0 | 0 | 0 | 0 |  | 0 | 0 |  |  |  | 0 |
| 11 | Blyn Rd | x |  |  |  |  |  |  |  |  |  |  | 0 |
| 12 | Old Blyn Hwy | x |  | 0 | 0 |  |  |  |  |  |  |  |  |
| 13 | Pierce Rd | x |  | 0 | 0 |  |  |  |  |  |  |  |  |
| 14 | Knapp/Guiles Rd | x |  | 0 |  |  |  |  |  |  |  |  |  |
| 15 | Chicken Coop-Diamond Point Rd | x | 0 |  |  |  |  |  |  |  |  | 0 |  |

Exhibit 2. Happy Valley Road Detail

## Happy Valley Road / US 101

Collision History (2009-2013)
Rate $\quad 0.13$ collisions per million entering vehicles
Severity $\quad 4$ collisions, 1 resulted in injury
Type $\quad 3$ rear end (left turns from main road to side road)
1 entering at angle

Volume on major road: 17,000 ADT
Volume on minor road: 350 ADT

## Existing Conditions

Adequate sight distance is available.
Collisions typically occur as vehicles exceed safe speeds.

There is no left turn pocket provided from westbound US 101 onto Happy Valley Road.
Happy Valley Road skewed (70 degrees) at intersection with US 101. This is within the guidelines of 60 to 120 degrees.
No illumination at intersection.

## Countermeasures

1. Widen section to provide a left turn pocket from westbound US 101 onto Happy Valley Road and receiving refuge lane for turns onto US 101.
Level of Effort: Medium
Potential Safety Benefit: High (44\% reduction in collisions)
2. Install illumination

Level of Effort: Medium
Potential Safety Benefit: Low (5\% reduction in collisions)
3. Reconstruct intersection approach to minimize skew.

Level of Effort: Medium
Potential Safety Benefit: Medium (10\% reduction in collisions)


Exhibit 3. Palo Alto Road Detail

## Palo Alto Road / US 101

Collision History (2009-2013)

| Rate | 0.10 collisions per million entering vehicles |
| :--- | :--- |
| Severity | 3 collisions, 2 resulted in injury and 1 resulted in fatality |
| Type | 2 entering at angle |
|  | 1 rear end (left turn from main road to side road) |

Volume on major road: 16,000 ADT
Volume on minor road: 800 ADT

## Existing Conditions

Adequate sight distance is available.
Collisions typically occur as vehicles exceed safe speeds.

There is no left turn pocket provided from westbound US 101 onto Palo Alto Road.

Palo Alto Road intersects US 101 with a skew of 30 degrees.

No illumination at intersection.

## Countermeasures

1. Widen section to provide a left turn pocket from westbound US 101 onto Palo Alto Road and receiving refuge lane for turns onto US 101.

Level of Effort: Medium
Potential Safety Benefit: High (44\% reduction in collisions)
2. Install illumination

Level of Effort: Medium
Potential Safety Benefit: Low (no reduction, all collisions during the day)
3. Reconstruct intersection approach to minimize skew.

Level of Effort: Medium
Potential Safety Benefit: Medium (28\% reduction in collisions)


Exhibit 4. W Sequim Bay Road Detail

## W Sequim Bay Road / US 101

Collision History (2009-2013)

| Rate | 0.03 collisions per million entering vehicles |
| :--- | :--- |
| Severity | 1 collision resulted in fatality |
| Type | 1 vehicle strikes object |

Volume on major road: 16,000 ADT
Volume on minor road: 2,000 ADT

## Existing Conditions Countermeasures

Adequate sight distance is available. However, the guardrail on the north side of the roadway, east of W Sequim Bay Road, potentially obstructing sight distance for southbound vehicles turning onto US 101.
W Sequim Bay road intersects US 101 with a skew (40 degrees).
Stop bar located 8-9 feet back from roadway.
Steep grade on W Sequim Bay road approaching US 101.

No illumination at intersection.

1. Remove barrier to improve sight distance.

Level of Effort: Low Potential Safety Benefit: Medium
2. Install illumination

Level of Effort: Medium
Potential Safety Benefit: Medium (15\% reduction in collisions)
3. Reconstruct intersection approach to minimize skew.
Level of Effort: Medium
Potential Safety Benefit: Medium (24\% reduction in collisions)


Exhibit 5. Barker Road Detail

## Barker Road / US 101

Collision History (2009-2013)

| Rate | 0.07 collisions per million entering vehicles |
| :--- | :--- |
| Severity | 2 collisions with no injury |
| Type | 1 rear end (left turn from main road to side road) |
|  | 1 vehicle strikes deer |

Volume on major road: 16,000 ADT
Volume on minor road: < 50 ADT

Existing Conditions
Two-way left turn lane tapers out at the intersection. (Merging movements potentially occurring at intersection).

Steep grade on Barker Road approaching US 101.
Adequate sight distance is available.
Collisions typically occur as vehicles exceed safe speeds.

No illumination at intersection.

## Countermeasures

1. Widen roadway to allow left turn lane to extend south of intersection.

Level of Effort: High
Potential Safety Benefit: High (56\% reduction in collisions)
2. Restripe so left turn lane fully merges north of the intersection.

Level of Effort: Low
Potential Safety Benefit: Medium
3. Install illumination

Level of Effort: Medium
Potential Safety Benefit: Low (all collisions occurred during the day)
4. Reduce grade approaching US 101

Level of Effort: Medium
Potential Safety Benefit: Medium (14\% reduction in collisions)


## Exhibit 6. Louella Road Detail

## Louella Road / US 101

Collision History (2009-2013)

| Rate | 0.14 collisions per million entering vehicles |
| :--- | :--- |
| Severity | 4 collisions with 3 resulted in injury |
| Type | 2 entering at angle (entering from side road to main road) |
|  | 2 rear end (left turns from main road to side road) |

Volume on major road: 16,000 ADT
Volume on minor road: 450 ADT

## Existing Conditions

No left turn pocket for northbound vehicles turning from US 101 to Louella Road. Guardrail exists along the east side of roadway. No refuge for northbound vehicles approaching a northbound left-turn vehicle.

Stream crossing exists south of intersection.
Adequate sight distance is available.
Collisions typically occur as vehicles exceed safe speeds.

No illumination at intersection.

## Countermeasures

1. Widen roadway to construct a northbound left turn lane and receiving refuge lane.

Level of Effort: High
Potential Safety Benefit: High (44\% reduction in collisions)
2. Remove guardrail and widen shoulder to allow for refuge or recovery area.

Level of Effort: Medium
Potential Safety Benefit: Medium (13\% reduction in collisions)
3. Install illumination

Level of Effort: Medium
Potential Safety Benefit: Low (6\% reduction in collisions)

View South onto US 101


Exhibit 7. Schoolhouse Point Lane

## Schoolhouse Point Lane / US 101

Collision History (2009-2013)

| Rate | 0.10 collisions per million entering vehicles |
| :--- | :--- |
| Severity | 3 collisions with 2 resulted in injury |
| Type | 2 rear end (left turns from main road to side road) |
|  | 1 vehicle strikes deer |

Volume on major road: 16,000 ADT
Volume on minor road: 400 ADT

## Existing Conditions

Wide shoulders exist on the north side of US 101 through the Schoolhouse Point Lane intersection.

No left turn lane is provided for vehicles turning off US 101 onto Schoolhouse Point Lane.

Adequate sight distance is available.
Collisions typically occur as vehicles exceed safe speeds.
No illumination at intersection.

## Countermeasures

1. Widen roadway to construct a southeastbound left turn lane and receiving refuge lane.
Level of Effort: Medium
Potential Safety Benefit: High (44\% reduction in collisions)
2. Install illumination

Level of Effort: Medium
Potential Safety Benefit: Low (collisions occurred during the day)


Exhibit 8. Corriea Road Detail

## Corriea Road / US 101

Collision History (2009-2013)

| Rate | 0.03 collisions per million entering vehicles |
| :--- | :--- |
| Severity | 2 collisions with 1 resulted in injury |
| Type | 1 entering at angle (entering from side road to main road) |
|  | 1 rear end (right turn from main road to side road) |

Volume on major road: 16,000 ADT
Volume on minor road: 200 ADT

## Existing Conditions <br> Countermeasures

Corriea Road west of US 101 is a low volume road providing a second access point to and from the 7 Cedars Casino and two residences.
A solid white stripe exists along US 101 as it intersects with Corriea Road. This indicates only right in/right out movements are allowed although left turn movements are observed.

Corriea Road east of US 101 provides access to a single family residence and a commercial lot.
Adequate sight distance is available.
Collisions typically occur as vehicles exceed safe speeds.

No illumination at intersection.

1. Close access to US 101.

Level of Effort: Low
Potential Safety Benefit: High
2. Widen roadway to construct an eastbound right turn pocket.

Level of Effort: Medium
Potential Safety Benefit: Medium (14\% reduction in collisions)
3. Widen roadway to construct an eastbound left turn lane and receiving refuge lane.

Level of Effort: Medium
Potential Safety Benefit: High (44\% reduction in collisions)
3. Install illumination

Level of Effort: Medium
Potential Safety Benefit: Medium (15\% reduction in collisions)


View East onto US 101


Exhibit 9. 7 Cedars Casino Driveway

## 7 Cedars Casino Driveway / US 101

Collision History (2009-2013)

| Rate | 0.13 collisions per million entering vehicles |
| :--- | :--- |
| Severity | 4 collisions with 1 resulted in injury |
| Type | 4 entering at angle (entering from side road to main road) |

Volume on minor road: 1,000 ADT

## Existing Conditions

Left and right turn lanes are provided at the driveway and along US 101. There is a refuge or receiving lane on US 101 for vehicles exiting the driveway northbound and turning westbound onto US 101.
Adequate sight distance is available.
Collisions typically occur as vehicles exceed safe speeds.

## Sophus Road / US 101

Collision History (2009-2013)

| Rate | 0.29 collisions per million entering vehicles |
| :--- | :--- |
| Severity | 8 collisions with 6 resulted in injury |
| Type | 5 entering at angle (entering from side road to main road) |
|  | 1 WB L hit by EB vehicle |
|  | 1 vehicle strikes deer |
|  | 1 vehicle strikes object |

Volume on major road: 14,000 ADT
Volume on minor road: 2,000 ADT (estimated)

## Existing Conditions <br> Left and right turn lanes are provided on Sophus

 Road and along US 101. There is a refuge or receiving lane on US 101 for vehicles entering westbound US 101 from Sophus Road.Adequate sight distance is available.
Collisions typically occur as vehicles exceed safe speeds.


## Countermeasures

1. Install a roundabout.

Level of Effort: High
Potential Safety Benefit: High (71\% reduction in collisions)

## Exhibit 11. Chicken Coop Road/Zaccardo Road Detail

## Chicken Coop Road / Zaccardo Road / US 101

## Collision History (2009-2013)

| Rate | 0.16 collisions per million entering vehicles (0.15 for 2004 to 2013) |
| :--- | :--- |
| Severity | 4 collisions with 1 resulted in injury |
| Type | 2 rear ends (turn from main road to side roads) |
|  | 1 entering at angle (entering from side road to main road) |
|  | 1 vehicle strikes object |

Volume on major road: 14,000 ADT
Volume on minor road: 300 ADT (Chicken Coop Road), 100 ADT (Zaccardo)

## Existing Conditions

Within a few hundred feet there are four access points to US 101. This includes Zaccardo Road, the driveway to the Tribal center, and Chicken Coop Road. The Chicken Coop Road intersection includes a "spur" or two locations to turn onto and off of US 101.

Chicken Coop Road intersects US 101 with a skew (angle).
Adequate sight distance is available.
Collisions typically occur as vehicles exceed safe speeds.

No illumination at intersection.

## Countermeasures

1. Realign Zaccardo Road to T with Chicken Coop Road. Reduces access points.
Level of Effort: Medium / Potential Safety Benefit: High
2. Install illumination

Level of Effort: Medium / Potential Safety Benefit: Low (8\% reduction in collisions)
3. Add left turn lane from US 101 onto Chicken Coop Road
Level of Effort: Medium / Potential Safety Benefit: High (44\% reduction in collisions)
4. Add right turn lane from US 101 onto Chicken Coop Road
Level of Effort: Medium / Potential Safety Benefit: Medium (14\% reduction in collisions)
5. Minor shoulder widening

Level of Effort: Medium / Potential Safety Benefit: Medium ( $13 \%$ reduction in collisions)
6. Fix roadway skew

Level of Effort: Medium / Potential Safety Benefit: Medium (29\% reduction in collisions)

## Chicken Coop Road / Zaccardo Road / US 101 (continued)



Exhibit 12. Blyn Road Detail

## Blyn Road / US 101

Collision History (2009-2013)

| Rate | 0.08 collisions per million entering vehicles |
| :--- | :--- |
| Severity | 2 collisions with 1 resulted in injury |
| Type | 1 rear end (left turn from main road to side road) |
|  | 1 vehicle strikes pedestrian |

Volume on major road: 14,000 ADT
Volume on minor road: 100 ADT
Existing Conditions
Turn pockets do not exist at this location. (The low
volume accessing Blyn Road would not warrant additional turn lanes).

## Countermeasures

1. Close access.

Level of Effort: Low
Potential Safety Benefit: High
Adequate sight distance is available.
Collisions typically occur as vehicles exceed safe speeds.

No illumination at intersection.


Exhibit 13. Old Blyn Highway

## Old Blyn Highway / US 101

Collision History (2009-2013)

| Rate | 0.12 collisions per million entering vehicles |
| :--- | :--- |
| Severity | 3 collisions with 1 resulted in injury |
| Type | 2 rear end (turns from main road to side road) |
|  | 1 entering at angle (entering from side road to main road) |

Volume on major road: 14,000 ADT
Volume on minor road: 400 ADT

| Existing Conditions |
| :--- |
| Turn lanes are not provided at the intersection. |
| Adequate sight distance is available. |
| Collisions typically occur as vehicles exceed safe |
| speeds. |

No illumination at intersection.

## Countermeasures

1. Widen roadway to construct a northeastbound left turn lane and receiving refuge lane.

## Level of Effort: Medium

Potential Safety Benefit: High (44\% reduction in collisions)


Exhibit 14. Pierce Road Detail

## Pierce Road / US 101

Collision History (2009-2013)

| Rate | 0.12 collisions per million entering vehicles |
| :--- | :--- |
| Severity | 3 collisions with 2 resulted in injury |
| Type | 3 rear end (left turns from main road to side road) |

Volume on major road: 14,000 ADT
Volume on minor road: 600 ADT

## Existing Conditions Countermeasures

Turn lanes are not provided at the intersection.
Adequate sight distance is available.
Collisions typically occur as vehicles exceed safe speeds.
No illumination at intersection.
View Southwest onto US 101

1. Widen roadway to construct a northeastbound left turn lane and receiving refuge lane.
Level of Effort: Medium
Potential Safety Benefit: High (44\% reduction in collisions)
View Northeast onto US 101


Exhibit 15. Knapp/Guiles Road Detail

## Knapp / Guiles Road / US 101

Collision History (2009-2013)

| Rate | 0.04 collisions per million entering vehicles |
| :--- | :--- |
| Severity | 1 collision with no injury |
| Type | 1 rear end (turn from main road to side road) |

Volume on major road: 14,000 ADT
Volume on minor road: 300 ADT

| Existing Conditions | Countermeasures |
| :--- | :--- |
| Turn lanes are not provided at the intersection. | 1. Widen roadway to construct west and <br> eastbound left turn lanes. |
| Adequate sight distance is available. | Level of Effort: Medium <br> Potential Safety Benefit: High (44\% reduction <br> in collisions) |
| Collisions typically occur as vehicles exceed safe <br> speeds. |  |
| No illumination at intersection. |  |

From Guiles Road (south side of US 101)
View West onto US 101
View East onto US 101


Exhibit 16. Chicken Coop/Diamond Point Road

## Chicken Coop Road / Diamond Point Road / US 101

Collision History (2009-2013)

| Rate | 0.22 collisions per million entering vehicles |
| :--- | :--- |
| Severity | 6 collisions with 3 resulted in injury |
| Type | 2 entering at angle (entering from side road to main road) |
|  | 1 rear end (turn from main road to side road) |
|  | 2 roadway/ditch |
|  | 1 head on collision |

Volume on major road: 14,000 ADT
Volume on minor road: 2,000 ADT

| Existing Conditions | Countermeasures |
| :--- | :--- |
| East and westbound left turn lanes are provided | 1. Install illumination |
| along US 101. | Level of Effort: Medium <br> Polential Safety Benefit: Low (9\% reduction in <br> collisions) |
| Adequate sight distance is available. | 2. Install a roundabout |
| Collisions typically occur as vehicles exceed safe |  |
| speeds. | Level of Effort: High <br> Potential Safety Benefit: High (71\% reduction <br> in collisions) |
| No illumination. |  | in collisions)



Appendix A

Road Safety Audit Team

## A-1 - Road Safety Audit

| Name | Organization | Participation in |
| :---: | :---: | :---: |
| Annette Nesse, Chief Operations Officer | Jamestown S'Klallam | Workshop |
| Steve Bennett, P.E. | WSDOT | Workshop, Field visit |
| Happy Longfellow, P.E. | Parametrix, Roadway Design | Workshop, Field visit |
| Tresia Hammonds | Parametrix, Traffic Operations and Planning | Workshop, Field visit |
| Greg Stidham, P.E. | Parametrix, Roadway Design | Workshop, Field visit |

Appendix B
Maps


| \# | Description | Severity |
| :---: | :--- | :--- |
| 1 | Entering at angle | No Injury |
| 2 | NWB vehicle rear-ended | No Injury |
| 3 | NWB vehicle rear-ended | Injury |
| 4 | NWB vehicle rear-ended | No Injury |

Happy Valley Road


Palo Alto Road

| \# | Description | Severity |
| :---: | :--- | :---: |
| 1 | Entering at angle | Fatality |
| 2 | Entering at angle | No Injury |
| 3 | NB rear-ended | No Injury |

\# Represents general collision location

Description Severity

| \# | Vehicle Strikes Object | Fatality |
| :---: | :---: | :---: |

W Sequim Bay Road


| \# | Description | Severity |
| :---: | :--- | ---: |
| 1 | SB R rear-ended | No Injury |
| 2 | Vehicle strikes deer | No Injury |


$7 z$ $\qquad$

| \# | Description | Severity |
| :---: | :--- | :--- |
| 1 | Entering at angle | No Injury |
| 2 | Entering at angle | Injury |
| 3 | NB L rear-ended | Injury |
| 4 | NB L rear-ended | Injury |

Louella Road
\# Represents general collision location





| \# | Description | Severity |
| ---: | :--- | :--- |
| 1 | Entering at angle | Injury |
| 2 | Entering at angle | Injury |
| 3 | Entering at angle | Injury |
| 4 | Entering at angle | Injury |

\# Represents general collision location

| $\#$ | Description | Severity |
| :---: | :--- | :--- |
| 5 | Entering at angle | No Injury |
| 6 | WB L hit by EB vehicle | Injury |
| 7 | Vehicle strikes deer | Injury |
| 8 | Vehicle strikes object | No Injury |




| \# | Description | Severity |
| :---: | :--- | :--- |
| 1 | SB R rear-ended | Injury |
| 2 | Vehicle strikes object | No Injury |
| 3 | Entering at angle | No Injury |
| 4 | SB L rear-ended | No Injury |



| \# | Description | Severity |
| :---: | :---: | :---: |
| 1 | NEB rear-ended | No Injury |
| 2 | Vehicle strikes pedestrian | Injury |

Blyn Road
\# Represents general collision location


| \# | Description | Severity |
| :---: | :--- | :--- |
| 1 | SWB R rear-ended | Injury |
| 2 | Entering at angle | No Injury |
| 3 | NEB L rear-ended | No Injury |

Old Blyn Highway


| \# | Description | Severity |
| :---: | :---: | :---: |
| 1 | NEB L rear-ended | No Injury |
| 2 | NEB L rear-ended | Injury |
| 3 | NEB L rear-ended | Injury |




| $\#$ | Description | Severity |
| ---: | :--- | :--- |
| 1 | WB rear-ended | No Injury |
| 2 | Entering at angle | Injury |
| 3 | Entering at angle | Injury |


| $\#$ | Description | Severity |
| :---: | :--- | :--- |
| 4 | Roadway ditch | Injury |
| 5 | Roadway ditch | No Injury |
| 6 | Head on collision | No Injury |

Chicken Coop/Diamond Point

## AppendixB- OrashSeverity- SequimandBiviMap



## APPENDIXC- WSDOTORASHDATA2014-2019 (DIGITAL)






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# APPENDIXD- OLALAMCOUNIY 2021-2026 TRANSPORTATIONIMPROVEMENT PROGRAM(TIP) (DigTAL) 

CR RESOLUTION $\qquad$ 2020

THE BOARD OF CLALLAM COUNTY COMMISSIONERS finds as follows:

1. RCW 36.81 .121 and WAC 136-15-010 requires the Board of County Commissioners to annually adopt a Six Year Transportation Improvernent Program.
2. Pursuant to WAC 136-20-060 the County Engineer prepared a 2020 Bridge Inspection Report to inform bridge priorities in preparing the Six Year Transportation Improvernent Program.
3. Six Year Transportation Improvement Program projects consider traffic volumes, roadway conditions, geometrics, safety and accident history; bridge inspectlon report, local significance, and available funding.
4. W.A.C. 136-20-060 and W.A.C. 136-14-050 requires that the Board has the Engineer's Bridge Report and the Priority Array available to consider at the time of determining the program.
5. Clalam County Planning Commission held a work session on the Six Year Transportation Improvement Program (2021-2026) on October 21, 2020.
6. The Clallam County Department of Community Development Issued a determination of nonsignificance (DNS) on the Draft Six-Year TIP (2021-2026) following review of the environmental checklist under the State Environmental Policy Act (SEPA).
7. The Clallam County Planning Commissioner held a public hearing on the Six Year Transportation Improvement Program (2021-2026) on November 4, 2020, and recommended approval of the SixYear Transportation Improvement Program.
8. Pursuant to RCW 36.81.121, a public hearing before the Board is required to be held so all taxpayers have a chance to comment on the proposed program.

NOW, THEREFORE, BE $\Pi$ RESOLVED by the Board of Clallam County Commissioners, in consideration of the above findings of fact:

1. A public hearing was held on November 24, 2020 on the Six Year Transportation Improvement Program for 2021-2026.
2. That the attached Six Year Transportation Improvement Program is hereby adopted from 2021 through 2026.

PASSED AND ADOPTED this $\qquad$ day of november 2020


## Clallam County Six-Year (2021-2026) Transportation Improvement Program (TIP)

## Guide to Codes and Acronyms

| Road Functional Class |  | Federal Fund Codes |
| :---: | :---: | :---: |
| 06=Rural Minor Afterial | 16=Utan Minor Arterial | FEMA=Federal Emergeney Management Agency Hazard Milgation Program |
| 07=Rutal Major Collector | 17-Urtar Collector Arterial | FLAP=Federal Lands Access Program |
| 08=Rural Minor Collector | 19=Uiban Local Access | HSIP=Highway Safely Improwement Program |
| 09=Rural Local Access |  | STBG=Surface Transportation Block Program |
|  |  | TA=Transportattion Alternatives |
| Improvemant Types |  |  |
| 01= New construction | 08=New Brdge Construction |  |
| 02=Relocation Project | 0s=Bridge or Culwert Replacement (e.g., fish passage project) | State Fund Codes |
| $03=$ Reconstruction | 10=Bridqe Rehabilitation | CAPP=County Asterial Preservation Program |
| 04=Majar Wwidening | 11=Minor Bridge Refabiliation | RAP=Rural Anterial Program |
| 05=Minar Widening | 12=Safety/Traffle Operation | TIA $=$ Transporlation Improvement Account |
| 06=Other Enhancements | 23=Transit | UATA=Uカan Arterial Trust Account |
| 07=Resurfacing | 32=Non-Motor Vehicle Project de.g. Olympic Discowery Trail) | RCO-FBRB=Recreation Conseryation Office-Fish Bamier Removal Board RCO-SRFB=Recreation Conservation Office-Salmon Recovery Funding Boerd RCO=Recreation Consarvation Office |
|  |  |  |
|  |  |  |
| Funding Status |  |  |
|  |  | Other Fund Codes (local funding) |
| S-Project selected for funding. Funding has been secured for all or some project phases. |  | REET=Real Estate Excise Tax (County) |
| $\mathrm{P}=$ Planned Project. Funding has not been fully delermined 8 may be dependent on grant or other agency. |  | LTAC=Lodging Tax Advisory Committee Grant (County) |
| PıL=Planned project (Unfunded) |  | LEKT=Lower Etwha S"Klalilam Tribe |
|  |  | PVITPriwate Donation |
| Project Phase |  |  |
| $\mathrm{PE}=$ Preliminary Engineering, R/W=Right-¢f-Way; Const=Construction |  | *Local Funding |
|  |  | This colurnn in the table shows the amount of local funds which are used on a project |
| Utility Codes |  | These funds come primarity from the properity tax road lewy, and the County's share of the |
| $\mathrm{C=Cablec}$; P=Power; $\mathrm{T}=$ Te | Water; S=Sewer; G=Gas: O=Other | State Motor Vehtele Fuel Tax. They can aso come from other local funding sources such as the lecal Real Estate Excise Tax, lodging tax grants, Tribet, and other sources. |




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# APPENDIXE-JEFFERSONCOUNIY2021-2026TRANSPORTATIONIMPROVEMENTPROGRAM(TIP) (Digital) 

## Jefferson County Public Works

 Adopted 2021-2026 Six-Year
## Transportation Improvement Program



## ADOPTED 2021-2026 Six-Year Transportation Improvement Program

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Welcome to the adopted 2021-2026 Six-Year Transportation Improvement Program (TIP) and its supporting materials. The Six-Year TIP is a rolling plan of proposed transportation projects that shows anticipated, partial, and/or total secured funding. The plan is annually updated to provide direction to transportation investments on Jefferson County's public roads and non-motorized inventory. The TIP development is a process that identifies and prioritizes future project phases to balance needs with financial resources, and schedules a six year planning period for reasonably viable projects.

A variety of capital preservation and improvement projects are included in the TIP but are reliant on receiving grants or federal investments such as Surface Transportation Program (STP) and state grants from CRAB, RCO, WSDOT and/or WDFW. The TIP prioritized list is highly influenced by the availability of these funds. The majority of the listed projects do not have secured funding as of TIP adoption. Historically, projects on Jefferson County's TIP have averaged over $80 \%$ funding from State and Federal sources; however, non-local transportation revenue sources usually fund specific types of improvements only on certain collector roads and trails. Federal and state grant program criteria can strongly influence which projects and features are accomplished. Often in smaller agencies, local match fund availability limits the number and size of grant applications. Local funds shown for this proposed Six-Year TIP average just $\$ 197,000$ per year and primarily come from the local Road Levy and Motor Vehicle Fuel Tax. Jefferson County has a limited tax base for its 400 road miles. Our transportation revenues are among the lowest per road mile in western Washington. The county road fund has seen a $25 \%$ overall reduction in annual operating revenue due to loss of federal land timber revenue in recent years. As a result, road fund reserves are projected to decline progressively each year.

The Six-Year TIP, like any other capital improvement plan, is only a plan for what should be done under the provision of adequate funding. It demonstrates typical or likely funding and/or a distribution of limited revenue sources. Decisions about advancing projects into design, acquisition, and construction are made through the county budgeting process. Since the Six-Year TIP is updated annually, it can be changed to reflect new needs, priorities, revenues, and revised budget assumptions.

If you would like more information, feel free to contact the Jefferson County Public Works office: 623 Sheridan Street, Port Townsend, WA (360)385-9160.

Monte Reinders, P.E.
Public Works Director/County Engineer


## COUNTY OF JEFFERSON STATE OF WASHINGTON

WHEREAS, State law obligates the legislative authority of each county to adopt on an annual basis a six-year transportation improvement program, holding a public hearing prior to adoption, the purpose of which is to "assure that each county shall perpetually have available advanced plans looking to the future for not less than six years as a guide in carrying out a coordinated transportation program" (RCW 36.81.121(1)); and,

WHEREAS, a multi-year analysis of the Road Fund was prepared covering the six-year program period using the County's best estimate of future revenues and expenditures in accordance with WAC 136-15-030; and,

WHEREAS, the Board of County Commissioners, Jefferson County, in the State of Washington, has reviewed the transportation project priority array, the road fund forecast and bridge condition report as prepared by the Department of Public Works, and has conducted a public hearing on the corresponding proposed six-year transportation improvement program;

IT IS HEREBY RESOLVED that the Board of County Commissioners does approve and adopt the Six-Year Transportation Improvement Program for the years 2021 through 2026 inclusive in accordance with WAC 136-15.

ADOPTED and signed this $26^{\text {th }}$ day of October 2020.


JEFFERSON COUNTY BOARD OF COMMISSIONERS


## ATTEST:



Carolyn Gallaway, Deputy Clerk


## NOTICE OF PUBLIC HEARING: PROPOSED SIX-YEAR TRANSPORTATION IMPROVEMENT PROGRAM

Notice is hereby given that a public hearing will be held by the Jefferson County Board of Commissioners on Monday, October 26, 2020, at 10:30 AM in the Commissioners' Chambers at the County Courthouse, 1820 Jefferson Street, Port Townsend, Washington, for the purpose of receiving written and verbal testimony about the adoption of the draft Jefferson County 2021-2026 Six-Year Transportation Improvement Program (TIP). "Each county shall perpetually have available advanced plans looking to the future for not less than six years as a guide in carrying out a coordinated transportation program, RCW 36.81.121(1)." Written public comment on the program will be received up and until the public hearing mailed to Jefferson County Commissioners' Office, PO Box 1220, Port Townsend, WA 98368 or emailed to jeffbocc@co.jefferson.wa.us.

The printed program is available for viewing at the Jefferson County Public Works office, 623 Sheridan Street, Port Townsend, open 8:00AM to 5:00PM, the Commissioners' office, 1820 Jefferson Street, Port Townsend, open 8:30AM to 4:30PM, and on the county website at www.co.jefferson.wa.us/444/6-Yr-TIP

Jefferson County ensures full compliance with Title VI of the Civil Rights Act of 1964 by prohibiting discrimination against any person on the basis of race, color, sex or national origin in the provision of benefits \& services resulting from its federally assisted programs \& activities. The meeting site is ADA accessible. Accommodations for people with disabilities can be arranged with advance notice by calling (360)385-9100.

NOTE: Due to Covid-19, it is unknown if there will be restrictions on the Open Public Meeting Act on the date of this Hearing that will preclude public in-person attendance. Check the Jefferson County webnite at www.co.jefferson.wa.us for the current status and follow "Quick Links-Videos of Meetings $\$$ Streaming Live." to testify at the public hearing.


Board of Jefferson County Commissioners


|  |  | PROJECT IDENTIFICATION <br> A. Road Log Number - Bridge Number <br> B. Beginning and End Milepost <br> C. Project (No.) / Road Name <br> D. Description of Work <br> E. Total Cost (incl. prior/future) |  |  |  |  |  |  | PROJECT COSTS IN DOLLARS |  |  |  |  |  |  | EXPENDITURE SCHEDULE |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  | FEDERAL FUNDS |  | FUNDING | OURCE INF | ORMATION | LOCAL | TOTAL |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | OTHER REVENUES |  |  | $\begin{aligned} & \text { YEAR } 1 \\ & 2021 \end{aligned}$ | $\begin{aligned} & \text { YEAR } 2 \\ & 2022 \end{aligned}$ | $\begin{aligned} & \text { YEAR } 3 \\ & 2023 \end{aligned}$ | $\begin{gathered} \text { YEAR } 4 \\ 2024 \end{gathered}$ | $\begin{aligned} & \text { YEAR } 5 \\ & 2025 \end{aligned}$ | $\begin{aligned} & \text { YEAR } 6 \\ & 2026 \end{aligned}$ | $\begin{array}{\|c\|} \text { TOTAL } \\ \text { 2021-2026 } \end{array}$ |
| 00 | 1 | US 101 \& connected county roads MP 294.6 to MP 295.0Quilcene Complete Streets - Phase 1(1801933)Publicly driven ped/bike improvements involving: US 101, traffic calming,sidewalk, crosswalk \& lighting improvements with a focus on connectingto the school campus. Total $=\$ 997,500 \quad$ (with $\$ 52,416$ from PIF) | 28 | S/P | E | 0.50 | $\begin{gathered} \text { PE } \\ \text { RW } \\ \text { CN } \\ \text { Total } \\ \hline \end{gathered}$ | 1/13 |  |  |  |  |  | 10,000 | 10,000 | 10,000 |  |  |  |  |  | 10,0 |
|  |  |  |  |  |  |  |  | $3 / 20$ |  |  |  |  |  |  | 0 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 6/21 |  |  | PBP | 695,350 | 52,416 | 0 | 747,766 | 747,766 |  |  |  |  |  | 747,766 |
|  |  |  |  |  |  |  |  |  |  | 0 |  | 695,350 | 52,416 | 10,000 | 757,766 | 757,766 | 0 | 0 | 0 | 0 | 0 | 757,766 |
| 07 | 2 | 91420 MP 0.00 to MP 12.04 (18019410) Upper Hoh Road Phase 2 - FLAP Project Local funds, total $\$ 63,621$,for infrastructure protection as performed by FHWA Western Federal Lands (WFL) division, thru FLAP program. Total FLAP = \$14,029,621 (uses toll credits) | 06 | s | s | 12.04 | $\begin{gathered} \mathrm{PE} \\ \mathrm{R} / \mathbf{W} \\ \mathrm{CN} \\ \text { Total } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 6/21 | FLAP |  |  |  |  | 10,000 | 10,000 | 5,000 | 5,000 |  |  |  |  | 10,000 |
|  |  |  |  |  |  |  |  |  |  | 0 |  | 0 | 0 | 10,000 | 10,000 | 5,000 | 5,000 | 0 | 0 | 0 | 0 | 10,000 |
| 09 | 3 | 63710 MP 0.00 to MP 0.46 (18020570) Cedar Avenue, Ness' Corner (SR116) to Hayden Road Ped-Bike WSDOT Safe Routes to School funds for ped/bike safety improvements including multi-use path, sidewalk, crosswalks, bike lanes, and RRFB. Total $=\$ 880,300$ | 28 | s | E | 0.61 | $\begin{gathered} \text { PE } \\ \text { R/W } \\ \text { CN } \\ \text { Total } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 6/19 |  |  | SRTS | 17,805 |  |  | 17,805 | 17,805 |  |  |  |  |  | 17,805 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 6/21 |  | 0 | SRTS | 803,152 820,957 | 0 | 0 | 803,152 | 803,152 | 0 | 0 | 0 | 0 |  | 803,152 |
| 00 | 4 | 8502004 Corners Road to Anderson Lake State ParkOlympic Discovery Trail (ODT) - Connection (1801989)PS\&E, ROW (RCO RRG) and Construction (STBG \& RCO WWRP) of ODsegment between Jefferson Transit P\&R and Anderson Lake State ParkTotal Construction $=\$ 1,189,020$ (STBG) $+\$ 2,189,021$ (RCO WWRP) | 28 | S/P | E | 2.70 | $\begin{gathered} \text { PE } \\ \text { RW } \\ \text { CN } \\ \text { Total } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 1/17 |  |  | RCO-RRG | 38,070 |  |  | 38,070 | 38,070 |  |  |  |  |  | 38,070 |
|  |  |  |  |  |  |  |  | 1/20 |  |  | RCO-RRG | 231,500 |  |  | 231,500 | 231,500 |  |  |  |  |  | 231,500 |
|  |  |  |  |  |  |  |  | 6/22 | STP-R | 1,189,020 | WWRP | 2,189,021 |  |  | 3,378,041 |  |  | 3,378,041 |  |  |  | 3,378,041 |
|  |  |  |  |  |  |  |  |  |  | 1,189,020 |  | 2,458,591 |  |  | 3,647,611 | 269,570 | 0 | 3,378,041 | 0 | 0 | 0 | 3,647,611 |
| 09 | 5$\mathbf{1 5 1 0 0} \quad$ MP 0.90 to MP 2.185 (18020460) <br> Undi Road Bypass - FLAP Project <br> Local funds, total $\$ 33,000$, to preserve access to ONP \& USFS as <br> performed by FHWA Western Federal Lands division, thru FLAP program. <br> Total FLAP $=\$ 2,034,407$ (uses toll credits) |  | 06 | s | 1 | 1.285 | $\begin{gathered} \text { PE } \\ \text { R/W } \\ \text { CN } \\ \text { Total } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 1/17 |  |  |  |  | FLAP |  |  |  |  | 13,336 | 13,336 | 6,668 | 6,668 |  |  |  |  | 13,336 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  |  |  |  |  |  |
|  |  |  | 6/22 |  |  |  |  | FLAP | 0 |  | 0 | 0 | 13,336 | 13,336 | 6,668 | 6,668 | 0 | 0 | 0 | 0 |  |
| 07 | 6 | 91420 MP 0.00 to MP 12.04 (18020560) <br> Upper Hoh Road Pavement Preservation <br> Pavement preservation \& safety improvements along Upper Hoh Rd. to Hoh Rain Forest/ONP boundary performed by FHWA, WFL division. <br> Total $=\$ 1,567,600$ (FLAP) $+\$ 408,400$ (RAP) |  | $\begin{aligned} & 06 \\ & 21 \end{aligned}$ | s | E | 12.04 | PE <br> R/W <br> CN <br> Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | 1/17 | FLAP | 0 | RAP | 61,400 |  |  | 61,400 | 6,400 | 55,000 |  |  |  |  | 61,400 |
|  |  |  |  |  |  |  |  |  | 6/21 | FLAP | 0 | RAP | 347,000 |  | 0 | 347,000 |  |  | 347,000 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | 0 |  | 408,400 | 0 | 0 | 408,400 | 6,400 | 55,000 | 347,000 | 0 | 0 |  | 408,400 |
| 08 | 7 | 7$\mathbf{4 1 8 7 0 \quad \text { MP 4.71 (18020580) }}$ <br> Thorndyke Road Culvert Replacement - Thorndyke Creek <br> Replace parallel culverts at Thorndyke Creek with fish-passable crossing. <br> RCO will manage permits and design review for lead agency FBRB. <br> Total $=\$ 1,843,723$ (FBRB) $+\$ 220,366$ (NFPP) $+\$ 75,000$ (PIF) | 11 | S/P | 1 | N/A | PE <br> R/W <br> CN <br> Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 719 |  |  |  |  | 5,000 | 53,000 | 13,000 | 8,000 | 5,000 |  |  |  |  | 10,000 |
|  |  |  |  |  |  |  |  | 7/21 | NFPP | 220,366 | FBRB | 1,645,410 | 7,000 |  | 1,935,776 |  | 1,935,776 |  |  |  |  | 1,935,776 |
|  |  |  |  |  |  |  |  |  |  | 220,366 |  | 1,645,410 | 75,000 | 18,000 | 1,958,776 | 18,000 | 1,940,776 | 0 | 0 | 0 | 0 | 1,958,776 |
| 07 | 8 | 93150 MP 3.26 <br> Center Road Culvert Correction - Chimacum Creek <br> Replace non-conforming road culvert with fish passable culvert design <br> for Chimacum Creek salmon. <br> Total grants= \$2,497,500 | 11 | P | 1 | N/A | PE <br> R/W <br> CN <br> Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 7/21 |  |  | FBRB | 202,300 |  | 35,700 | 238,000 | 28,000 | 100,000 | 100,000 | 10,000 |  |  | 238,00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 00 | 9 | Countywide Bridge Load Re-Rating <br> Federally required re-analysis of 22 county bridge load ratings for accomodation of new specialized hauling vehicles by 12-31-22. Total STBG $=\$ 111,325.50$ ( No Construction) | 18 | s | E | N/A | PL <br> R/W <br> CN <br> Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 1/21 | STP-R | 111,325 |  |  |  | 17,375 | 128,700 | 128,700 |  |  |  |  |  | 128,70 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | 111,325 |  | 0 | 0 | 17,375 | 128,700 | 128,700 | 0 | 0 | 0 | 0 | 0 | 128,700 |
| 09 | 10 | 51410 MP 2.59 (18020591)10West Valley Road Culvert Replacement - Naylors CreekReplace culvert at Naylor Creek with fish-passable crossing and realigncreek for 300ft. RCO will manage permits\& design review for FBRB.Total Grants $=(\$ 99,425+\$ 684,980)$ FBRB Plan\&Restore $+\$ 127,854$ NFPP | 11 | S/P | 1 | N/A | $\begin{gathered} \text { PE } \\ \text { R/W } \\ \text { CN } \\ \text { Total } \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 10/19 | NFPP | 7,425 |  |  |  | 6,250 | 13,675 | 6,250 | 1,225 | 6,200 |  |  |  | 13,675 |
|  |  |  |  |  |  |  |  |  |  |  | FBRB |  |  | 3,000 | 3,000 | 3,000 |  |  |  |  |  | 3,000 |
|  |  |  |  |  |  |  |  | 6/24 | NFPP | 120,429 | FBRB | 682,430 |  | 0 | 802,859 |  |  | 4,000 | 798,859 |  |  | 802,859 |
|  |  |  |  |  |  |  |  |  |  | 127,854 |  | 682,430 | 0 | 9,250 | 819,534 | 9,250 | 1,225 | 10,200 | 798,859 | 0 | 0 | 819,534 |
| 09 | 11 | 13430 MP 8.50 to MP 10.98Oil City Road Engineering Assessment - FLAP ProjectLocal funds for infrastructure protection, planning project performedby FHWA Western Federal Lands division, thru FLAP program.Total FLAP $=\$ 250,000$ (uses toll credits) | 18 | S |  | 2.48 | $\begin{gathered} \text { PE } \\ \text { R/W } \\ \text { CN } \\ \text { Total } \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | 1/21 |  | FLAP |  |  |  |  | 30,000 | 30,000 | 15,000 | 15,000 |  |  |  |  | 30,000 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | 0 |  | 0 | 0 | 30,000 | 30,000 | 15,000 | 15,000 | 0 | 0 | 0 | 0 | 30,000 |


|  |  | PROJECT IDENTIFICATION <br> A．Road Log Number－Bridge Number <br> B．Beginning and End Milepost <br> C．Project（No．）／Road Name <br> D．Description of Work <br> E．Total Cost（incl．prior／future） |  |  |  |  | $\begin{aligned} & \text { 山⿱山⿱一⿱㇒⿴囗㐅㐅木又 } \end{aligned}$ |  | PROJECT COSTS IN DOLLARS |  |  |  |  |  |  | EXPENDITURE SCHEDULE |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  | FEDERAL FUNDS |  | FUNDING SOURCE INFORMATION |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | OTHER REVENUES | LOCAL FUNDS | TOTAL | YEAR 1 <br> 2021 | $\begin{aligned} & \text { YEAR } 2 \\ & 2022 \end{aligned}$ | $\begin{aligned} & \text { YEAR } 3 \\ & 2023 \end{aligned}$ | $\begin{aligned} & \text { YEAR } 4 \\ & 2024 \end{aligned}$ | $\begin{aligned} & \text { YEAR } 5 \\ & 2025 \end{aligned}$ | $\begin{aligned} & \text { YEAR } 6 \\ & 2026 \end{aligned}$ | $\begin{gathered} \text { TOTAL } \\ \text { 2021-2026 } \end{gathered}$ |
| 09 | 12 | Snow Creek Road Culvert Replacement | 11 | P | E | N／A | PE R／W <br> CN | 6／21 | FEMA | 86，250 | ${ }^{\text {FEMAM }}$ | 1，875 |  | 1，875 | 15，000 | 15，000 | 0 |  |  |  |  | 15，000 |
|  |  | on an unnamed tributary w／o anadromous fish． |  |  |  |  |  | 6／22 | FEMA | 1，010，345 | FEMAm | 168，391 |  | 168，391 | 1，347，127 | 0 | 1，347，127 |  |  |  |  | 1，347，127 |
|  |  | Total FEMA（Hazard Mitigation Program＋Local Funds）$=\$ 1,292,486$ |  |  |  |  |  |  |  | 1，107，845 |  | 184，641 | 0 | 184，641 | 1，477，127 | 125，000 | 1，352，127 | 0 | 0 | 0 | 0 | 1，477，127 |
| 09 | 13 | 51750 MP 1.82 （18020591）${ }_{\text {l }}$ | 11 | S／P | 1 | N／A | PE R／W <br> CN <br> Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Gibbs Lake Road Culvert Replacement－Naylors Creek Replace culvert at Naylor Creek with fish－passable crossing． |  |  |  |  |  | 10／19 |  |  |  |  |  | 8，625 | 8，625 |  |  |  | 8，625 |  |  |  |
|  |  | RCO will manage permits and design review for lead agency FBRB． |  |  |  |  |  | 6／25 | NFPP | 105，152 | FBRB | 599，261 |  | 0 | 704，413 |  |  |  | 4，000 | 700，413 |  | 704，413 |
|  |  | Total Grants $=\$ 99,425$（FBRB－secure）$+\$ 606,592$（FBRB）$+\$ 105,152$（NFPP） |  |  |  |  |  |  |  | 105，152 |  | 599，261 | 0 | 8，625 | 713，038 | 0 | 0 | 0 | 12，625 | 700，413 | 0 | 713，038 |
| 00 | 14 | SR19 MP 9.56 to MP 10.1 （18020040） <br> Rhody Drive Ped－Bike Improvements－North Segment  | 28 | S／P | E | 1.0 | $\begin{gathered} \text { PE } \\ \text { RWW } \\ \text { CN } \\ \text { Total } \\ \hline \end{gathered}$ | 7／21 | TAP | 86，021 |  |  |  | 13，425 | 99，446 | 78，525 | 20，921 |  |  |  |  | 99，446 |
|  |  | Pedestrain \＆bicycle facilities along SR19 connecting HJ Carroll Park／Rick |  |  |  |  |  |  |  |  |  |  |  |  | 9，4． |  |  |  |  |  |  |  |
|  |  | Tollefson Trail to finished improvements at Chimacum Schools Campus． |  |  |  |  |  | 6／22 |  |  | SRTS | 388，947 |  |  | 388，947 |  | 388，947 |  |  |  |  | 388，947 |
|  |  | Total secure grants＝\＄109，907 TAP |  |  |  |  |  |  |  | 86，021 |  | 388，947 | 0 | 13，425 | 488，393 | 78，525 | 409，868 | 0 | 0 | 0 | 0 | 488，393 |
| 00 | 15 | SR19 MP 8．94 to MP 9．56（18020040） | 28 | S／P | E | 1.0 | PE <br> R／W <br> CN <br> Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Rhody Drive Ped－Bike Improvements－South Segment |  |  |  |  |  | 7／21 | TAP | 165，223 |  |  |  | 22，226 | 187，449 | 69，858 | 117，591 |  |  |  |  | 187，449 |
|  |  | Pedestrain \＆bicycle facilities along SR19 connecting the Chimacum |  |  |  |  |  | $7 / 22$ | TAP | 37，137 |  |  |  | 5，796 | 42，933 |  | 42，933 |  |  |  |  | 42，933 |
|  |  | School Campus to the Chimacum Crossroads commercial corridor． |  |  |  |  |  | 6／23 |  |  | SRTS | 979，992 |  |  | 979，992 |  |  | 979，992 |  |  |  | 979，992 |
|  |  | Total secured grant $=\$ 152,093$ |  |  |  |  |  |  |  | 202，360 |  | 979，992 | 0 | 28，022 | 1，210，374 | 69，858 | 160，524 | 979，992 | 0 | 0 | 0 | 1，210，374 |
|  | 16 | 850100 \＆527109（18019560）Rick Tollefson Trail－Ballfield ConnectionOld Hadlock Road and Chimacum Road intersection realignment withmulti－use trail connecting the Rick Tollefson Trail to Bob Bates Fields．Total $=\$ 208,269$（with $\$ 140,000$ from PIF） | 28 | P | E | 0.30 | $\begin{gathered} \text { PE } \\ \text { R/W } \\ \text { CN } \\ \text { Total } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 1／19 |  |  |  |  |  | 17，605 | 17，605 |  | 17，605 |  |  |  |  | 17，605 |
| 09 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ${ }^{0} 72$ |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 6／24 |  | 0 |  | 0 | 140，000 | 32,965 50,570 | $\begin{array}{r}172,965 \\ \hline 190,570\end{array}$ |  |  | $\begin{array}{r}172,965 \\ \hline 172,965\end{array}$ |  |  |  | 172,965 <br> 19,570 |
| 07 | 17 | 93150 Center Road MP 14．60Little Quilcene River Bridge Replacement1955， 64 －ft．concrete bridge with structural deficiencies is eligible forreplacement through federal bridge program．Total $=\$ 2,949,981$ | 11 | P | E | 1.0 | $\begin{gathered} \text { PE } \\ \text { R/W } \\ \text { CN } \\ \text { Total } \\ \hline \end{gathered}$ |  |  | 0 |  |  |  | 50，5\％0 | 190，570 | 0 | 17，605 |  | 0 | 0 | 0 |  |
|  |  |  |  |  |  |  |  | 1／22 | BRR | 316，000 |  |  |  |  | 316，000 |  | 316，000 |  |  |  |  | 316，000 |
|  |  |  |  |  |  |  |  | 1／22 | BRR | 50，000 |  |  |  |  | 50，000 |  | 50，000 |  |  |  |  | 50，000 |
|  |  |  |  |  |  |  |  | 6／23 | BRR | 2，583，981 |  |  |  |  | 2，583，981 |  |  |  | 2，583，981 |  |  | 2，583，981 |
|  |  |  |  |  |  |  |  |  |  | 2，949，981 |  | 0 | 0 | 0 | 2，949，981 | 0 | 366，000 | 0 | 2，583，981 | 0 | 0 | 2，949，981 |
| 07 | 18 | $93150 \quad$ MP 10．34 to MP 14.58 <br> Center Road 2R <br> Resurface 4.24 miles of Center Road <br> north from the Little Quilcene River． <br> Total grants $=\$ 1,700,700$ | 05 | P | E | 4.24 | $\begin{gathered} \text { PE } \\ \text { R/W } \\ \text { CN } \\ \text { Total } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 1／23 |  |  | RAP | 53，800 |  | 6，086 | 59，886 |  |  | 59，886 |  |  |  | 59，886 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 6／24 |  |  | RAP | 1，646，900 |  | 183，086 | 1，829，986 |  |  |  | 1，829，986 |  |  | 1，829，986 |
|  |  |  |  |  |  |  |  |  |  | 0 |  | 1，700，700 | 0 | 189，172 | 1，889，872 | 0 | 0 | 59，886 | 1，829，986 | 0 | 0 | 1，889，872 |
| 00 | 19 | ```850200 S. Discovery and 4 Corners Roads (18019890) Olympic Discovery Trail (ODT) Link Multi-use path connection from Milo Curry Trailhead of the ODT-Larry Scott Trail to the Jefferson Transit Main Base/Park n Ride. Total \(=\$ 535,258\)``` | 28 | P | E | 0.62 | $\begin{gathered} \text { PE } \\ \text { RW } \\ \text { CN } \\ \text { Total } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 7／21 |  |  | PBP | 126,813 33,904 |  | 10，000 | $\begin{array}{r}136,813 \\ 33,904 \\ \hline\end{array}$ | 26，013 | 50，400 | 60,400 33,904 |  |  |  | $\begin{array}{r}136,813 \\ \hline 3,904 \\ \hline\end{array}$ |
|  |  |  |  |  |  |  |  | 6／22 |  |  | PBP | 354，541 |  |  | 354，541 |  |  |  | 354，541 |  |  | 354，541 |
|  |  |  |  |  |  |  |  |  |  | 0 |  | 515，258 | 0 | 10，000 | 525，258 | 26，013 | 50，400 | 94，304 | 354，541 | 0 | 0 | 525，258 |
| 08 | 20 | 60150 MP 4.52 to MP 4．84South Discovery Road 3RResurface County Road，widen shoulders，some re－alignment，removeclear zone hazards from Adelma Beach Road to SR20 intersection．Total grant＝$\$ 768,600$ | $\begin{gathered} 04, \\ 28 \end{gathered}$ | P | E | ． 32 | $\begin{gathered} \text { PE } \\ \text { R/W } \\ \text { CN } \\ \text { Total } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 4／23 |  |  | RAP | 118，800 |  | 8，200 | 127，000 |  |  |  |  | 127，000 |  | 127，000 |
|  |  |  |  |  |  |  |  | 9／24 |  |  | RAP | 27，000 |  | 3，000 | 30，000 |  |  |  |  | 30，000 |  | 30，000 |
|  |  |  |  |  |  |  |  | 6／26 |  |  | RAP | 622，800 |  | 69，200 | 692，000 |  |  |  |  |  | 692，000 | 692，000 |
|  |  |  |  |  |  |  |  |  |  | 0 |  | 768，600 | 0 | 80，400 | 849，000 | 0 | 0 | 0 | 0 | 157，000 | 692，000 | 849，000 |
| 00 | 21 | US 101 \＆multiple county roads MP 294．54 to MP 295.03Quilcene Complete Streets－Phase 2Phase 2 project implementing plan to provide sidewalks，crosswalks，\＆bicycle lanes to connect school，community center \＆local businesses．Total $=\$ 1,341,750$ | 28 | P | E | 0.05 | PE <br> R／W <br> CN <br> Total | 7／25 |  |  | PBP | 181，750 |  |  | 181，750 |  |  |  | 30，000 | 151，750 |  | 181，750 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 1／26 |  |  | PBP | 1，160，000 |  |  | 1，160，000 |  |  |  |  |  | 1，160，000 | 1，160，000 |
|  |  |  |  |  |  |  |  |  |  | 0 |  | 1，341，750 | 0 | 0 | 1，341，750 | 0 | 0 | 0 | 30，000 | 151，750 | 1，160，000 | 1，341，750 |
| 00 | $22 \left\lvert\, \begin{aligned} & 8 \\ & \text { O } \\ & \text { a } \\ & \text { a } \\ & \text { T }\end{aligned}\right.$ | 850200 Anderson Lake State Park to HWY－101 <br> Olympic Discovery Trail（ODT）－Eaglemount <br> Complete a preferred route report，begin PS\＆E development，permitting and right－of－way appraisal and acquisition． <br> Total $=\$ 406,491$（Planning and Right－of－Way only） | $\left.\begin{gathered} 15, \\ 16, \\ 28 \end{gathered} \right\rvert\,$ | s |  | 8.0 | $\begin{gathered} \text { PE } \\ \text { R/W } \\ \text { CN } \\ \text { Total } \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | 1／20 |  |  |  | RCO－RRG | 14，000 |  |  | 14，000 | 14，000 |  |  |  |  |  | 14，000 |
|  |  |  |  |  |  | 1／20 |  |  |  | RCO－RRG | 60，000 |  |  | 60，000 | 60，000 |  |  |  |  |  | 60，000 |
|  |  |  |  |  |  | N／A |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 |
|  |  |  |  |  |  |  |  |  | 0 |  | 74，000 | 0 | 0 | 74，000 | 74，000 | 0 | 0 | 0 | 0 | 0 | 74，000 |



## Guide to Codes, Abbreviations and Acronyms

The following is a guide to codes used in the TIP project spreadsheet for Jefferson County recognized by state and federal agencies.

FEDERAL FUNCTIONAL CLASSIFICATION (FFC)

| 03 | Rural Other Principal Arterial | 09 | Rural Local Access |
| :--- | :--- | :---: | :--- |
| 06 | Rural Minor Arterial | 17 | Urban Collector |
| 07 | Rural Major Collector | 19 | Urban Local Access |
| 08 | Rural Minor Collector | 00 | No Functional Classification, ex. trails |

IMPROVEMENT TYPES per the Statewide Transportation Improvement Program (STIP) Categories

| 01 | New construction roadway | 18 | Planning |
| :--- | :--- | :--- | :--- |
| 03 | Reconstruction - added capacity | 19 | Research |
| 04 | Reconstruction - no added capacity | 20 | Environmental only |
| 05 | 4R Maintenance - resurfacing | 21 | Safety |
| 06 | 4R Maintenance - restoration \& rehabilitation | 22 | Rail/highway crossing |
| 07 | 4R Maintenance - relocation | 23 | Transit |
| 08 | Bridge - new construction | 24 | Traffic Management/Engineering - HOV |
| 10 | Bridge replacement - added capacity | 25 | Vehicle Weight Enforcement |
| 11 | Bridge replacement - no added capacity | 26 | Ferry Boats |
| 13 | Bridge rehabilitation - added capactiy | 27 | Administration |
| 14 | Bridge rehabilitation - no added capacity | 28 | Facilities for Pedestrians \& Bicycles |
| 15 | Preliminary Engineering | 40 | Special Bridge |
| 16 | Right-of-Way | 48 | Bridge Protection |
| 17 | Construction Engineering | 49 | Bridge Inspection |

## FUNDING STATUS

$S=$ Secured (funded); P = Planned (unfunded); S/P = Partial secure funded (most likely by phases)

## PROJECT PHASE (by STIP definition)

PL = Planning not leading to construction; PE = Preliminary Engineering \& Design; R/W = Right-of-Way acquisition; an $\mathrm{CN}=$ Construction \& Construction Engineering

## Guide to Codes, Abbreviations and Acronyms

The following is a guide to abbreviations and acronyms used in the TIP project spreadsheet for Jefferson County.

FEDERAL FUND CODES (competitive funds applicable to Jefferson County)

| BRR | Bridge Replacement and Rehabilitation, Program (aka "BRAC") |
| :--- | :--- |
| ER | Emergency Relief |
| FEMA | Federal Emergency Management Agency, Hazard Mitigation Program |
| FLAP | Federal Lands Access Program from WFL |
| HIP-R | Highway Infrastructure Program (2018 only) |
| HSIP | Highway Safety Improvement Program |
| NFPP | National Fish Passage Program |
| SRSII | Secure Rural School-Title II |
| SRTS | Surface Transportation Program-Safe Routes to Schools from Federal |
| STBG | Surface Transportation Block Grant Setasides |
| STP-R | Surface Transportation Program-Rural |
| TAP-R | Surface Transportation Program-Transportation Alternatives from RTPO |
| WAFH | Washington Forest Highways, Program |

STATE FUND CODES (competitive funds applicable to Jefferson County)

| ALEA | Aquatic Lands Enhancement Account |
| :--- | :--- |
| FBRB | Fish Barrier Removal Board |
| FEMAm | Federal Emergency Management Agency, Hazard Mitigation Program match, from State |
| NOVA | Non-Highway and Off-Road Vehicle Activities, Program |
| PBP | Pedestrian and Bicycle Program |
| PSAR | Puget Sound Acquisition and Restoration, Fund |
| RAP | Rural Arterial Program from CRAB |
| RRG | Recreation Resource Grant (managed by Recreation Conservation Office (RCO)) |
| SRFB | Salmon Recovery Funding Board |
| SRTS | Safe Routes to School, Program from State |
| TIB | Transportation Improvement Board, Complete Streets Award or Urban Sidewalk |
| WWRP | Washington Wildlife Recreation Program |

OTHER FUND CODES (applicable to Jefferson County)
CAPP County Arterial Preservation Program
PIF Public Infrastructure Fund
PILT Payment in Lieu of Taxes

## ENVIRONMENTAL ASSESSMENT

Applicable to CRAB Applicable to Federal Funding

| E | EXEMPT | Categorically Exempt CE or Documented Categorically Exempt DCE |
| :--- | :--- | :--- |
| I | INSIGNIFICANT | Environmental Assessment EA |
| S | SIGNIFICANT | Environmental Impact Statement EIS |

## PAST ACCOMPLISHMENT

## Quilcene Center Road 2R \& Complete Street

Resurface and Restore Center Road MP14.61 to MP15.01

2020-2025 Adopted TIP
TIP Priority Array \#4

Remove and replace layers of deteriorating asphalt pavement \& replace sidewalks curb and ADA ramps.

Total Funding
\$788,000


## PAST ACCOMPLISHMENT

## South Discovery Road, MP 3.18-4.58

Pavement Preservation
2019-2024 Adopted TIP
TIP Priority Array \#3
Resurface and restore a 1.39 mile section of asphalt road to preserve the roadway structure and improve ride quality and safety. Minor shoulder widening, paving and edge finishing. Contractor: Lakeside Industries, Inc.


## PAST ACCOMPLISHMENT

## OLYMPIC DISCOVERY TRAIL

South Discovery Bay - Segment B to Larry Scott Trail
2019-2024 Adopted TIP TIP Priority Array \#4

Complete a preferred route report, begin PS\&E development, SEPA, and right-of-way appraisal and acquisition.

Preferred route report complete, April 2019 with design guidelines.

Preferred route selected from 4 Corners Road to Anderson Lake Park, June 2019 Acquisition Phase continues, near completion

| Total RCO Funds | $=\$ 1,000,000$ |
| :--- | :--- |
| Remaining for ROW | $=\$ 74,000(2021-2026$ TIP) |




East Jefferson - 18 projects

## TRANSPORTATION

## IMPROVEMENT PROGRAM

 2021-2026 27 PROJECTS- DESIGN (PE)
- RIGHT-OF-WAY (ROW)
- CONSTRUCTION (CN)

West Jefferson - 5 Projects

County wide - 4 Projects


| Ranked \#1 | Criteria 16 | GRANT AVAILABILITY: |
| :---: | :---: | :---: |
|  | 96.7\% | Transportation infrastructure is eligible for grants, has a) an application filed to grant agencies, b) indication of grant availability, or c) secured grant funding. |
| Ranked \#2 | $\begin{gathered} \text { Critenia } \\ 5 \end{gathered}$ | SCHOOL PEDESTRIAN ROUTE |
|  | 90.0\% | Road segment is an authorized school pedestrian route sanctioned by the school transportation coordinator and needs sufficient pedestrian facilities to the school campus. |
| Ranked \#3a | Criteria $14$ | COMMUNITY PLANNING/COMPREHENSIVE LAND USE CONSISTENCY: |
|  | 83,3\% | Road segment provides mobility within and accessibility to an area of potential development which is land use consistent with zoning and approved codes. Koad segment is identified in an adopted Growth Management Act sub-area or comprehensive plan for correction of deficiencies or improvements. |
| Ranked \#3b | Criteria $17$ | ECONOMIC DEVELOPMENT: |
|  | 83.3\% | Road segment, if not improved, will have a measurable and obvious impact on economic development or other rational measures of public necessity. |
| Ranked \#+ ${ }_{\text {a }}$ | Criteria | CRASH HISTORY |
|  | 80.0\%\% | Road segment has signuificant hazard potential, defects or collisions. The inventory documents one or more serious injuries and fatalities to pedestrian, breyclist or driver passenger withim past five years. |
| Ranked \#fb | $\begin{array}{\|c} \hline \text { Criteria } \\ 1 \\ \hline 800 \% \end{array}$ | NON-MOTORIZED NEEDS: |
|  | 80.0\% | Road or trail segment is on adopted alignment or nion-motorized route map, frequented by non-motorized users, and needs sufficient active uansportation facilities for the latent demand. |
| Ranked \#fe | $\begin{gathered} \hline \text { Criteria } \\ 6 \\ \hline \end{gathered}$ | TRANSIT AND SCHOOL BUS ROUTES: |
|  | 80.0\% | Road segment supports fixed-route transit and/or school routes with numerous stops, and high volumes of users within one-mile of the school "safe-routes-to-school" |

Oo
0 TIP PRIORITY ARRAY
$02021-2026$
Top 14 Projects with secured or partially secured funding.

Two Pending Grant Funded Projects as of October 2020



EXAMPLE PROJECTS WITH SECURED AND ANTICIPATED FUNDING IN 2021

## Road \& Intersection Improvements

Culvert \& Bridge Replacement /Repair/Heavy Maintenance

Non-Motorized Transportation

## Assessments \& Countywide Programs

Mitigation for Emergency Projects





## 2021-2026* Projected Expenditures by Type of Funding



Total TIP* Project Funding (27 projects) = \$26,525,362

2021-2026 County Road Fund Projections

|  | DESCRIPTION | Incr. | ACTUAL <br> 2019 | $\begin{gathered} \text { PROJ } \\ 2020 \end{gathered}$ | BUDGET <br> 2021 | total 2021-2026 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| sənuəләу бu!џeıədo | PROPERTY TAXES (+ NEW CN) | 0.5\% | 4,548,564 | 4,634,222 | 4,628,139 | 28,118,267 |
|  | PROPERTY TAXES: $1 \%$ (1-747) | 1.0\% |  |  |  | 235,612 |
|  | BANKED CAPACITY (Taken) | 0.5\% | 0 | 0 | 0 | 0 |
|  | ROADS LEVY SHIFT |  | 0 | 0 | 0 | 0 |
|  | DIVERSION (Traffic Enforcement) | 1.0\% | $(720,000)$ | $(720,000)$ | $(720,000)$ | $(4,320,000)$ |
|  | TIMBER TAX | 0.0\% | 219,200 | 136,717 | 200,000 | 1,200,000 |
|  | FEDERAL FOREST (SRS) | 0.0\% | 403,540 | 363,190 | 85,000 | 510,000 |
|  | PILT TRANSFER (partial offset) | 3.0\% | 86,172 | 131,344 | 425,211 | 2,750,439 |
|  | DNR TIMBER SALES | 0.0\% | 212,927 | 140,026 | 125,000 | 750,000 |
|  | FUEL TAX | 0.5\% | 1,478,291 | 1,253,328 | 1,582,000 | 9,611,444 |
|  | CAPA, TPA, MVA FUNDS | 0.0\% | 254,688 | 244,943 | 267,000 | 1,602,000 |
|  | PERMITS \& FEES | 1.0\% | 203,765 | 184,754 | 153,000 | 941,258 |
|  | OTHER MISC. REVENUE | 0.0\% | 38,059 | 29,108 | 3,500 | 21,000 |
|  | REIMBUSIBLE SERVICES |  | 12,141 | 11,745 | 2,930 | 2,940 |
|  | TOTAL OPERATING REVENUES: |  | 6,737,347 | 6,409,377 | 6,751,780 | 41,422,960 |

- Road Diversion Capped at $\$ 720 \mathrm{~K}$ per year
- Maintain a $25 \%$ Operating Reserve until 2024


## 2021-2026 Six-Year County Road Fund Projections



## FIRST YEAR OF THE TIP IS THE DRAFT ANNUAL CONSTRUCTION PROGRAM



- Provided copy for Board input.
- Adopted as part of biennial County budget
- Alternate years, adoption by Consent Agenda
- Sent to County Road Administration Board by 12-31-2020


## UPDATED <br> BRIDGE CONDITION REPORT 2020

## Jefferson County Master Inventory

Total \# of Bridges $=35$ West County $=20$

$$
\text { East County = } 15
$$

Total \# of Permanently Closed Bridges $=2$
Total \# of Active Bridges = 35 incl. pedestrian
Recommended Bridge Maintenance Activity at:

- Hurst Creek - Clearwater Road Steel Diaphragm Painting
- Contractor's Creek - Old Gardiner Road Pile Bracing and Stiffening
- Cassel Creek - Oil City Road Steel Girders Painting

Recommended Bridge Replacement at::

- Little Quilcene River - Center Road TIP \#17



TOTAL FUNDING 27 TIP PROJECTS
SECURE FLAP VS. NON-FLAP (OTHER)
FEDERAL LANDS ACCESS PROGRAM, ADMINISTERED BY FHWA


Total Project Funding, 27 projects $=\$ 45,453,144$

Interactive STORYMAPPING all 27 TIP projects with site specific pegs. Go to
https://arcg.is/1fO5n8



## 2020 Bridge Condition Report



As required by WAC 136-20-060, "Each county engineer shall furnish the county legislative suthority with a written report of the findings of the bridge inspection effort. This report shall be made available to said authority and shall be consulted during the preparation of the proposed six-year transportation program revision. The report shall include the county engineer's recommendations as to replacement, repair or load restriction for each deficient bridge. The resolution of adoption of the six-year transportation program shall include assurances to the effect that the county engineer's report with respect to deficient bridges was available to said authority during the preparation of the program. It is highly recommended that deficient short span bridges, drainage structures, and large culverts be included in said report."

Jefferson County Public Works has 35 active bridges-see the attached Master Bridge List (Appendix A) for a listing of the county bridges. Of these, 33 bridges meet the federal definition of a bridge and are subject to the National Bridge Inspections Standards. Two of the bridges do not meet the federal bridge definition, one because it is a pedestrian bridge, and one because it has less than a twenty foot span; nevertheless, these two bridges are on Jefferson County's biannual bridge inspection program. Jefferson County also has two permanently closed

## INTRODUCTION

## BRIDGE INVENTORY


bridges, which are not listed on the Master Bridge List.

## BRIDGE INSPECTIONS

The National Bridge Inspection Standards (NBIS) and WAC 136-20-030 mandate that public agencies inspect and report on all bridges at least once every two years (routine inspection). Jefferson County staff performs all routine inspections. Special inspections are required for bridges that cannot be inspected adequately from the ground. For these bridges an Under-Bridge Inspection Truck (UBIT) is required. Steel bridges with fracture critical members may also require special inspections with the UBIT and/or other special equipment. Jefferson County has two bridges which require the UBIT inspection and one bridge which requires both the UBIT and the fracture critical inspection (identified in the attached Master Bridge List). Jefferson County currently has a contract with the Washington State Department of Transportation (WSDOT) to perform these inspections.

Jefferson County Public Works has split up the bridge inspections so that East Jefferson County bridges are inspected in odd-numbered years and West Jefferson County bridges are inspected in even-numbered years. In conformance with that schedule, Jefferson County completed the biennial inspections for all West Jefferson County bridges in 2020. The
completed inspection reports were submitted to WSDOT, which verifies compliance with the NBIS and reports to the Federal Highway Administration (FHWA),

All bridges are assigned a sufficiency rating (SR), which is a calculated score based on numbers assigned to all of the bridge elements reviewed by the bridge inspector. The $S R$ is a number from 0 to 100 , with 100 being an entirely sufficient bridge, and 0 being an entirely insufficient bridge. For additional explanation of the sufficiency rating and other ratings see the attached WSDOT publication, Bridges and Structures - Ratings (Appendix B). The sufficiency rating is used to determine if a bridge is eligible for federal rehabilitation or replacement funding. Under the current funding requirements, to be eligible for replacement a bridge must be structurally deficient and have a sufficiency rating of less than 40; to be eligible for rehabilitation a bridge must be structurally deficient and have a sufficiency rating of less than 80 . Currently, the county has one bridge that is classified as structurally deficient and has a sufficiency rating less than 40: Little Quilcene Bridge on Center Road. Public Works plans to apply for bridge $r$ epla cem ent funding as described under Programmed Projects.

As described in previous Bridge Condition reports, the Tower Creek Bridge is being manitored for potential scour problems


Tower Creek Bridge
associated with down-cutting of the streambed. The Tower Creek streambed experienced significant down-cutting in 2007-2008 due to migration of the Hoh River and heavy flows in Tower Creek. However, based on regular monitoring, the streambed elevation has been relatively stable since 2008. Public Works will continue to monitor this situation. The Tower Creek Bridge is scheduled to be replaced in 2021-2022 by the Federal Highway Administration Western Federal Lands Division, and is being funded entirely by a Federal Lands Access Program grant.

## POSTED BRIDGES



Yorr Bridge

All bridges are required to have a "Load Rating" calculation. The Load Rating establishes how much weight the bridge can carry for several standard configurations of vehicle axle loads. If the load rating calculation shows that a bridge cannot safely carry one or more of the legal vehicle axle load configurations, then the bridge must be posted with the appropriate load limits. Jefferson County currently has two bridges that are load posted, Meyers Bridge on Belfrage Road and Hemphill Creek Bridge on Dowans Creek Road. In addition, the load rating calculations for the Yarr Bridge indicate that it should be posted for a number of legal vehicles. However, the bridge has been carrying normal traffic for an appreciable length of time and shows no distress. In accordance with the Manual for Bridge Evaluation (published by
the American Association of State Highway and Transportation Officials), and as recommended by the WSDOT Local Programs Bridge Engineer, Jefferson County is following a plan of increased inspection frequency as an acceptable alternative to load posting. Public Works inspects the


Underside of Hurst Creek Bridge Yarr Bridge on a 12 month frequency. as opposed to the standard 24 month frequency. and intends to continue with this plan, provided that the bridge contimues to show no signs of distress.

Similarly, the load rating calculations for the Little Quilcene Bridge on Center Road indicate that it should be posted for a number of legal loads, but this bridge has also been carrying normal traffic for an appreciable length of time and shows no distress. Based on the Manual for Bridge evaluation, the load rating document states that load posting is optional and should be at the Countys discretion. The County has exercised this option and not posted the bridge. However, as of September 2020, FHWA has disagreed with the County's discretionary authority and has informed the County that the bridge must be posted. The County is complying with this request and intends to post the bridge.

A 2013 FHWA mandate requires that all bridges be load rated for a relatively new class of vehicle, the Specialized Hauling Vehicle (SHV). SHV's are closely-spaced multi-axle single unit trucks
introduced by the trucking industry in the last decade. Examples include dump trucks, construction vehicles, solid waste trucks and other hauling trucks. The FHWA has divided bridges into two categories, with the first category requiring updated load ratings by December 31, 2017, and the second category requiring updated load ratings by December 31, 2022. Prior to the 2013 mandate, Jefferson County already had eight bridges with load ratings that met the new FHWA requirements. Jefferson Caunty has completed new load ratings for three bridges for the 2017 deadline. An additional twenty-two bridges will need to be re-load rated prior to the 2022 deadline. It is possible that some Jefferson County bridges will need to be load posted for SHV's after the load rating results are known.

## OVERWEIGHT/ OVERSIZE VEHICLE PERMITTING PROCESS

Last year Public Works developed a new form and process for evaluating and issuing overweight/ oversize vehicle permits. A policy was written to help ensure that consistent procedures are used in processing permits, and a new, more detailed application form was developed. The new application form, along with associated webpage updates, was deployed last fall and has been used successfully to issue permits.

The Old Little Quilcene Bridge and the Maple Creek Bridge have been placed in obsolete status and removed from the Master Bridge List. Both are permanently closed to vehicular traffic. This action removes the requirement for biennial bridge inspection.

Routine maintenance of the countys bridges is conducted by the road maintenance department. Typical routine maintenance consists of deck cleaning, brush clearing, and minor miscellaneous repairs.

In April 2019, the County applied for $\$ 90,830$ in Bridge Replacement Advisory Committee (BRAC) funds for a preventative maintenance project on the Hurst Creek Bridge, Clearwater Road milepost 2.66. The Hurst Creek Bridge has concrete girders with steel diaphragms between the girders at mid-span. The steel diaphragms are in need of repainting or replacement. In September 2019 we learned the project would not be funded through BRAC, so an alternative funding source will need to be found.

No emergency repairs or inspections were performed in 2020 at the time of this report.

## EMERGENCYREPAIRS AND INSPECTIONS

No bridge projects were completed in 2020.
COMPLETED
PROJECTS

Current projects include the following:

## CURRENT PROJECTS

Upper Hoh Road/Olympic National Park Federal Lands Access Program (FLAP) Project:

Design is complete on a new 120 ft. long concrete bridge to replace the existing bridge at Tower Creek, Upper Hoh Road milepost 7.5. This project is being managed by the Federal Highway Administration Western Federal Lands Division, and is funded almost entirely by a FLAP


Preliminary Tawer Creek Bridge drawing


Culvert ot Thorndyke Creek
grant and toll credits. Construction is scheduled for 2021-2022.

Design is complete on a new 120 ft . long concrete bridge to replace the culvert at Canyon Creek, Upper Hoh Road milepost 10.0. This project is being managed by the Federal Highway Administration Western Federal Lands Division, and is funded almost entirely by a Federal Lands Access Program grant and toll credits. Construction is scheduled for 2021-2022. However, federal funding for this project is uncertain and may delay the project.

The fish-barrier culverts at Thorndyke Road milepost 4.71 (Thorndyke Creek) will be replaced with a new bridge. Public Works has secured grant funding from the Fish Barrier Removal Board (FBRB) for project design and has completed the preliminary design process. Public Works applied for construction funds from the FBRB in 2020 and plans to construct the project in 2021-2022.

The fish-barrier culverts at West Valley Road milepost 2.59 (Naylor Greek) and Gibbs Lake Road milepost 1.82 (Naylor Creek) will be replaced with new structures most likely meeting bridge criteria. Public Works has secured grant funding from the FBRB for project design, and has completed the preliminary design process. Public Works applied for construction funds from the FBRB in 2020 and plans to construct the project in 2022-2023.

In addition to Current Projects, the following potential bridge projects are programmed in the 2020-2025 Transportation Improvement Program (TIP):

The culvert at Center Road milepost 3.26 (Chimacum Creek) will be replaced with a fish-passable structure, which will most likely meet the criteria for a bridge, given the stream width.

Re-load rating of 22 county bridges, as described previously in this document.

The Little Quilcene River Bridge on Center Road has been reclassified by the Washington State Department of Transportation as Structurally Deficient and the Sufficiency Rating was lowered from 60 to 22, based on a new load rating performed by the County in 2017. The load rating was required by the federal mandate to load rate bridges for specialized hauling vehicles, and the bridge was found to be deficient for some of these vehicles. Given the revised Sufficiency Rating and the Structurally Deficient classification, the bridge is now eligible for federal bridge replacement funds. Jefferson County intends to apply for bridge replacement funds in the next funding round, which will occur in early 2021.

Two or more heavy maintenance projects are anticipated during the period 2020-2025, and are

RECOMMENDED
PROJECTS identified as Countywide Bridge Improvements in the TIP. With 35 bridges in its inventory, and half of them around 50 years old, the county has to plan and budget for ongoing maintenance, in addition to capital projects. Potential maintenance projects include pile bracing/stiffening at Contractor's Creek Bridge, and repainting of the steel girders at Cassel Creek Bridge.

Hurst Creek Bridge steel diaphragm repainting/ replacement, as described under maintenance activities.

Appendix A

# Jefferson County Public Works 

 Master Bridge ListLAST URDATED: 9/4/19

Total number arbridges in inventory: 35
Total number of permanently closed bridges: 2
Total number of active bridges: 35
Tital number of West Jefferson County bridges: 19 active bridges
I short-span (non NBIS) bridge
l permanently closed bridge
Total number of East Jefferson County Bridges
14 active bridges
1 pedestrian (non NBLS) bridge
I permancntly closed bridge

|  |  | $\begin{aligned} & \text { ㅂ⿹ㄹ } \\ & \frac{1}{2} \end{aligned}$ |  |  |  |  | BRIDS | E TYPF |  |  | $\begin{aligned} & \text { E } \\ & \text { 合 } \\ & \text { E } \\ & \text { E } \\ & \text { E } \\ & \hline \end{aligned}$ |  |  |  |  |  |  |
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|  |  |  |  |  |  |  | Supersiructure | Subatructure |  |  |  |  |  |  |  |  |  |
| 7996700 | LsE | ［1／ $\mathrm{manta}^{\text {a }}$ | 634309 | Hust Rd． | 0.15 | 27 | Reinfarced Conc glab－ | Cathic．Abutiment wi＇ C．IP．COHE piles | 1971 |  |  |  | $4!16119$ | 29 68 |  | 24 |  |
| 8165160 | 16t： | Litule <br> Quilecre Rivel | 93.1507 | Concer Hd | 146 6 | 64 | Reinforid Cumis． Sliab，Cime．Gudes | Cote：Pies cap， Prestress Cunc． piles | 1955 |  |  |  | 4／16il9 | 28．2］ | $5{ }^{5}$ | 24 | Eligible for btadge teplacentent tunds． |
| 4464900 | 17E | Yart | $93.50{ }^{\text {a }}$ | Center R．d． | 3.44 | 23 | Curlc．Multipie wheb Girder | Conc．Abulitent <br>  piles | 1955 |  |  |  | 4.9120 | 6497 |  | 12 |  |
| 8320300 | 23 E | Linger Longer | 301305 | Linger <br> 1，bnger［ad | 0.42 | 81 | Prestress Conc Bulb－T Girdet | Conc Abutment w／ Cunce culurin ower C．［．P．conce pile | 1969 |  |  |  | 41619 | 6191 |  | 24 |  |
| 9381400 | 24 E | Rach Brook | 25000108 | Doserfallips Rd | 3.01 | 47 | Prestres．Cone Bulb－＇T Gijder | Conc stoulment mi Cune Spread foating | 1964 |  |  |  | 416 | 75.92 |  | 24 |  |
| 82299000 | 25 E | Mieyers | 503405 | Felfrage R．d | 0.12 | 30 | Titubist | Jimber abutmenl． lumber pulces | 1575 |  |  | X | 6istint | 74.95 |  | 24 |  |
| 8488200 | 26E： | Wegt Uncas | 500205 | West Unces Rd． | 189 | 61 | Kernf．Come Slah | Conc．Abultemi． C．athe cohumith orict C．I．IF．gonct pile | 1964 |  |  |  | 4＇1610 | 83.26 |  | 24 |  |
| 4136900 | 28E | Lelartd C＇reck | 344049 | Rice Lale <br> Rd | 033 | 32 | Frestress Cunc Slab | Conce Ahutment， Conc spread fortme | 1998 |  |  |  | $4{ }^{\prime \prime} 16.19$ | 8810 | FO | 24 |  |
| 966them | 29E | Contractions Creck | 501409 | Gld Giardinet Rd | ${ }^{3} .5$ 56 | 294 | Trmbes Lhek， Timbeal filideta | Cuncis．Pile crap，sted piles | 2000 |  |  |  | 8，4，20 | 8742 |  | 24 | URIT ENERY 4 YEARS－ LAST URIT 思4／2020 |

Jefferson County Public Works
Master Pridge Iist
East Jefferson Counly

| Last Updated: 9/2/2020 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | Coluntr mumber | $\begin{aligned} & \frac{2}{E} \\ & \frac{1}{2} \\ & \hline \end{aligned}$ |  |  |  |  | BEID | Ge TYPE |  |  | E E E E $E$ $E$ E | $\begin{aligned} & \text { E } \\ & \text { 気 } \\ & \text { g } \\ & \text { है } \end{aligned}$ |  |  |  |  | 道 |
|  |  |  |  |  |  |  | Superstructure | Siubstructure |  |  |  |  |  |  |  |  |  |
| 88754000 | 31E | Shinc Cresk | 4476010 | Smuth Prusint Rd | 0.25 | 70 | Prestress. Conc. <br> Slab- | Contc, Abutment wi Corke. Pile | 20015 |  |  |  | $4 / 1615$ | 97.60 |  | 24 |  |
| 8753900 | 32E: | Donowar Crepk | 327308 | $\begin{aligned} & \text { Ti Quideene } \\ & \text { Rd. } \end{aligned}$ | 0.77 | 70 | Prestress Cane Slath | Conce Ahufment wi Cunc. Pile | 21046 |  |  |  | 4/16119 | 87.36 |  | 24 |  |
| 8753980 | 33E | Old Tabbor | 357509 | $\qquad$ | 0.88 | 42 | Prestress. Canc. 51ab | Cone Ahutment w/ steel piles | 2005 |  |  |  | 4!1619 | 89.98 |  | 24 |  |
| \$753800 | 38 E | Andrews Creck | 352909 | $\begin{aligned} & \text { Snow Creak } \\ & \text { Rd. } \end{aligned}$ | 3.78 | 24 | Conc. 3 -sided Box Culvert | Conce. Sprad Foating | 2014 |  |  |  | 4/16/19 | 91.14 |  | 24 |  |
| 8898600 | 4]E | RTMTI Fedestran | 352909 | Rick Tilletsurn Mern. Trail | 0.17 | SO | 5teel Thru Tתus | Cone Sprad Fooring | 2017 |  |  |  | 4,30/19 | N/A |  | 24 |  |
| 8972400 | 42 E | $\begin{aligned} & \text { Wally } \\ & \text { Bowman } \end{aligned}$ | 500209 | $\begin{array}{\|l\|} \hline \text { West Uuexs } \\ \mathrm{Rd} . \end{array}$ | 1.81 | 8 B | Prestress Cons. Hulb-T Girder | Conc: Abulment wt Conc. Fill | 2018 |  |  |  | 411619 | 95.95 |  | 24 |  |


|  |  | $\frac{6}{5}$ |  |  | 氰 |  | Pringe | E. TPPF. |  |  |  |  |  | Si:FFICIENCY RdTING |  |  |  |
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|  |  |  |  |  |  |  | Superstradtut | 5almiractare |  |  |  |  |  |  |  |  |  |
| 8451604 | U1W | Fificher Creek | 91160: | Quinaulc 5 <br> Share Rd | 313 | T 7 | Prosuris Conf Bulb-l Cititer | Come Ahutment wi CJ $\mathrm{F}^{2}$ whe pile | 1974 |  |  |  | 52026 | 9963 |  | 24 |  |
| 8756500 | 012W | Barlow | 13.417199 | Til ricy Rd | 973i | 6 | Prestress, dunde slab | Conc. Abument wi C1P Cone Pile | 2005 |  |  |  | $5126 \% 20$ | 4334 |  | 14 |  |
| 8145.400 | 0:3\% | Anderiadn treek | 1343105 | Glatiged | 444 | 87 | Pregress Lanc Bulber Girde | Conc Abulment wi CIP conc pile | 1974 |  |  |  | 5.20120 | 419. |  | 24 |  |
| 8280100 | [19 | Hell Roaring Cruek | $914120 \cdot 7$ | [1pper Huh R.d | 316 | 120 |  Gisder | Conc Abutrnent w; ximel H prle | 1983 |  |  |  | ET.20 | 71.65 |  | 24 |  |
| 82998500 | 05 | Alder Creel | 914207 | iTpper Hoh Fid | 207 | 4,3 | PTestresh Curic Eulb-I Gjerder | Cume Abutsment mi CIF EOME pile | 1972 |  |  |  | 521720 | 921 |  | 24 |  |
| 39.983640 | 1064 | Rack dreek | 9150 | Usper Foh | 649 | 8.3 | Preitess 5-anc Bulb-T Girdip | Carre Abutment wi' CIP canc pile | 1973 |  |  |  | 3:21:20 | 77.41 |  | 24 |  |
| 8384006 | 107w | 104ter Corexk | 94.307 | Uppact Hah PG | TS | 71 | Pextress Cond: Equlb-T Girder | Canc Abutmiric wi ©JP Punce min | 1973 |  |  |  | 5.2120 | 78.81 |  | 24 |  |
| 599100 | 1184 | Queets Ruver | 107509 | Clearniuler Rad | 46 | 984 4 | Stiepl Platic Givider: C. [J' come der | Cone Piess, Come Ahbulmant wis secl H pule | 1798 |  |  |  | 7!1 Li' ${ }^{\text {a }}$ | 986 |  | 24 | UBTT EYEEY A YEARE L.45T C'FlT Tunclig |
| \$04.7800 | 104\% | Herriphiil: Crack | 146805 | Townat Creterd | 23 | 31 | Timbur Deck. Tuquer Girders | Tinilura duulinicirs. buber piles | 1973 |  |  |  | 5ivura | -653 |  | 24 |  |
|  | 103 | Dicwans CJetk | 145809 | 「2043 3 n 5 Crest RL | 0.52 | 81 | Frestress ©itr Búb-T Girder | Cons Aburment w: C., Pe come pile | 1974 |  |  |  | 592020 | 4.46 |  | $2{ }^{24}$ |  |


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|  |  |  |  |  |  |  | Supersiructure | Substrutiure |  |  |  |  |  |  |  |  |  |
| $4{ }^{4} 759504$ | 11ヶ | Own Creek | 135109 | $\begin{aligned} & \text { hifaple } \\ & \text { Craxik: Rd } \end{aligned}$ | 129 | 69 | Peastess Cone Stab | Conce Abulutull w＇ stecl H piies | 1989 |  |  |  | 5.2020 | 83.39 | FO | 24 |  |
| 453600 | 13\％ | Hural Creal | ［17509 | Clagwatce Fd | 26 | 67 | Fherters Cont BulbrT Girdel | Conc Abulument． Cune culwan，Cume， Fabline | 1964 |  |  |  | $5120 / 26$ | 9882 |  | 24 | Winintatuck nexded＝ <br>  |
| 453940 | 23W | Willou drby Creck | 91420 | UPper Hoh Fd | 352 | 60 | Ptestess conc Bulb－T Givice | Conce Pile cial wi <br> Prestres，Coma piles | 1957 |  |  |  | 5.21820 | 4563 |  | 24 |  |
| 8659900 | $30{ }^{2}$ | Cussel Crek | 134909 | Oil Cily | 359 | 134 | Sterel Girder | Come Palle cap．Sleel piles | 2006 | X |  |  | Tigitic | 86812 | FO | 24 | Fras <br>  <br>  Tr：Ancteranct－puth siel imaticg |
| 282980： | 74w | Prile Creek | 914907 | VTater Hish 14．4 | \＆ | 37 | Cunt 3－sidell Elos Culvent | Come Sprad Fonlule | 2015 |  |  |  | 5：211720 | 8020 |  | 24 |  |
| 9845600 | 7514 | Tismal Creek | 914207 |  Kd | 919 | 22 | Cwn 3－3jdeal How Culuct | Cudt ©pread Fowian | 2.111 |  |  |  | 5．21：20 | 7319 |  | 24 |  |
| 885350c | 3617 | Finuce Cubek | 414307 | $\mathrm{V}_{\text {plp }} \mathrm{H}_{\mathrm{u}} \text { uth }$ R.d | 4 | 27 | Culy 3－uided Fux Culwerl | Cone spead Ficoting | 2012 |  |  |  | 5，21：25 | 77．4］ |  | 24 |  |
| 886．330 | 3ご产 | Alder Trech Trizw | 514720：7 | ［］pper｜Inh Rd | 215 | 25 | T．anc 3 －gided Fiox C＇ulyer | Cone 5 preal Fowtine | 2013 |  |  |  | 5，21．30 | 7665 |  | 24 |  |
|  | 354 | L＇pper Itah RA MCP65 | $71420{ }^{5}$ | L＇pper Hah $\mathrm{F} d$ | 6 9 크 | 21 | Conc 3－sided Bax Culthen | Conc Spread Fiating | 2016 |  |  |  | $521 / 20$ | 82.84 |  | 24 |  |
| $\begin{aligned} & \mathrm{x} 0101077 \\ & 100 \end{aligned}$ | 11E | Dunilcy Crep | 10750 | Clearwarr <br> R．d | 125 | 17 | Cünc 3－pided Bux Culwer | Open－trided ited pipe piline | 2015 |  |  |  | 320420 |  |  | 24 |  |

## Appendix B

Washington Stato
Dopartmont of Trentiporintion

## Bridge Ratings

The safety of bridge structures in Washingron State is ensured through a meticulous inspection system. All public bridge owners, sueh as WSDOT, Counties and cities, follow the same bridge inspection procedures. The condition rating of all bridge decks, superstructures and substructures and other elements pased on these inspections.

USDOT's Federal Highway Administration (FHWA) requires all public bridge owners (state, city, and county) to inspect and their bridges and report information including bridge condition ratings as part of their requirements in the National Bridge Inventory Standards (NBIS).

Important aspects of the NBIS were:

2. Data collection was standardized and must be reported to FHWA.
3. Qualifications for inspection personnel were defined.
4. Training programs were developed and implemented,
5. The Bridge Replacement Program (BRP) was established to provide funding for bridge replacement on the system.

## Structurally Deficient

Structurglly deficient means that a bridge requires repair or replacement of a certan component. This may maclucle tracked or spalled concrete, the bridge deck, the support structure, or the entire bridge itself. If the condition is such that it no longer is able to carry its intenged traffic loads it may be weight restricted. Being structurally deficient does not imply that the bridge is in danger of collapse or unsafe to the traveling public, If a bridge is open then it is considered safe.

[^0]WhDOT has 137 state owned bridged that are elossifled as structurally deficient as of lan. 2015. A list of tmese bridges is awallable in poff and web page and map format.

## Functionally Obsolete

Functionai obsolescence is assessed by comparing the existiny design of each bridge to current standards.

A bridge can be categorized functonally obsolete a number of wars including; subsmadard bricige widths, bw wertical clearance that can lead to repeated damage from ower height truckes, load-carrying caparityr or flood patential.


Intergtate B2 Columbia Riwer bridge near Umatilla


## Good, Fair, Poor Condition RatIng

Good: $A$ range from no problems to some minor deterioration of structural elements.
Fair: All primary structural elements are sound hut may have deficiencies such as minor section foss, deteriaration, cracking, spalling, or scour.

Poor: Advanced deficiencies such as section loss, deterioration, cracking, spaling, scour, or seriously affected primary structural components, Bridges rated in poor condition may be posted with truck weight restrictions.

A summary of the WSDOT bridge network conditions is available in the 2014 Bridge Annual Report in the Gray notebook.

## Bridge inspection Definitions

What are "general condition ratings?" According to the National Bridge Inspection Standards (NBIS), condition ratings are used to describe an existing bridge or culvert compared with its condition if it were new. The ratings are based on the materials, physical condition of the deck (riding surface), the superstructure (supports immediately beneath the driving surface) and the substructures (foundation and supporting posts and piers). General condition ratings range from 0 (failed condition) to 9 (excellent). For detailed definitions, click here.

Which bridges are included in the NBI system? NBI structures are bridges or culverts that carry vehicular traffic and have an opening longer than 20 feel measured along the center of the roadway.

What bridges are not considered part of the NBI system? Non-NBI structures include bridges or culverts that carry vehicular traffic and are oqual to or less than 20 feet measured along the center of the roadway.

VDOT exceeds the NBI standards by inspecting and documenting in our inventory all bridges regardless of their length and all culverts having an opening greater than 36 square feet.

What is a "structurally deficient" bridge? Bridges are considered structurally deficient if they have been restricted to light vehicles, closed to traffic or require rehabilitation. Structurally deficient means there are elements of the bridge that need to be monitored and/or repaired. The fact that a bridge is "structurally deficient" does not imply that it is likely to collapse or that it is unsafe. It means the bridge must be monitored, inspected and maintained.

How is "structural deficiency" determined? The condition of different parts of a bridge is rated on a scale of 0 to 9 (with 9 being "excellent" and zero being "failed"). A structurally deficient bridge is one for which the deck (riding surface), the superstructure (supports immediately beneath the driving surface) or the substructure (foundation and suipporting posts and piers) are rated in condition 4 or less.

What makes a bridge structurally deficient, and are structural deficient bridges unsafe? The fact that a bridge is "structurally deficient" does not imply that it is likely to collapse or that it is unsafe. A "deficient" bridge is one with some maintenance concerns that do not pose a safety risk. A "deficient" bridge typically requires maintenance and repair and eventual rehabilitation or replacement to address deficiencies. To remain open to traffic, structurally deficient bridges are often posted with reduced weight limits that restrict the gross weight of vehicles using the bridges. If unsafe conditions are identified during a physical inspection, the structure must be closed.

What is a "functionally obsolete" bridge? A functionally obsolete bridge is one that was built to standards that are not used today. These bridges are not automatically rated as structurally deficient, nor are they inherently unsafe. Functionally obsolete bridges are those that do not have adequate lane widths, shoulder widths, or vertical clearances to serve current traffic demand, or those that may be occasionally flooded.

A functionally obsolete bridge is similar to an older house. A house built in 1950 might be perfectly acceptable to live in, but it does not meet all of today's building codes. Yet, when it comes time to consider upgrading that house or making improvements, the owner must look at ways to bring the structure up to current standards.

What is a "fracture-critical" bridge? A fracture-critical bridge is one that does not contain redundant supporing elements. This means that if those key supports fail, the bridge would be in danger of collapse. This does not mean the bridge is inherently unsafe, only that there is a lack of redundancy in its design.

What is a bridge's "sufficlency rating?" Sufficiency ratings were developed by the Federal Highway Administration to serve as a prioritization tool to allocate funds. The rating varies from 0 percent (poor) to 100 percent (very good). The formula considers structural adequacy, whelher the bridge is functionally obsolete and level of service provided to the public.

History of Federal Bridge Inspection Program The federal bridge inspection program regulations were developed as a result of the Federal-Aid Highway Act of 1968 following the collapse of the Silver Bridge in Point Pleasant, West Virginia. The United States Secretary of Transportation established the National Bridge Inspection Standards (NBIS) to locate and evaluate existing bridge deficiencies to ensure the safety of the traveling public.

The 1968 Federal-Aid Highway Act directed the states to maintain an inventory of federal-aid highway system bridges. This was amended over time to establish criteria for NBIS bridges including:

- Defining the NBIS to bridges to those on the federal-aid highway system
- Requiring inspections of bridges longer than 20 feet on all public roads
- Expanding bridge inspection programs to include special inspection procedures for fraclurecritical members and underwater inspection


## Description

NOT APPLICABLE
EXCELLENT CONDITION
VERY GOOD CONDITION No problems noted.
GOOD CONDITION Some minor problems.
SATISFACTORY CONDITION Structural elements show some minor deterioration.
FAIR CONDITION All primary structural elements are sound but may have some minor section loss (due to corrosion), cracking, spalling (deterioration of concrete surface) or scour (erosion of soil)

POOR CONDITION Advanced section loss, deterioration, spalling or scour.
SERIOUS CONDITION Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local tailures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.

CRITICAL CONDITION Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
"IMMINENT" FAILURE COND|TION Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movernent affecting structure stability. Bridge is closed to traffic but corrective action may put back in light service.

FAILED CONDITION Out of service - beyond corrective action.

## TIP Distribution List

Digital Copy unless where noted

|  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |


[^0]:    A bridge is classifled as "Structurally Deficient" when oridge inspectors give either the supersirntture, deck, and/or substruchere a rating of four or lest cir a scale of cero to nlne. whDOT's poor condition category wses the same data, eriterra, and rating scale.

